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CURRENT FILING DATE: 2002-06-14
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TITLE OF INVENTION: NOVEL HUMAN HISTONE PEPTIDES
FILE REFERENCE: 3053-4145US1
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                                                                                                                    SEQ ID NO 7
                                                                                                                     PRIOR APPLICATION NUMBER: US 60/192,157
PRIOR FILING DATE: 2000-03-24
NUMBER OF SEQ ID NOS: 33
SOFTWARE: Patentin version 3.1
SEQ ID NO 7
                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                     Sequence 7, Application US/09817913 Patent No. US20020061860A1
                                                                                                                                                                               APPLICANT: Besterman, Jeffrey
TITLE OF INVENTION: Inhibition of Specific Histone
FILE REFERENCE: 106101.145
CURRENT APPLICATION NUMBER: US/09/817,913
CURRENT FILING DATE: 2001-03-26
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TYPE: PRT
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532	473 CTCCCTCAGCAGCCCTCCCTCTGGACAGCTCCCCCAACCAGTTCAGCCTCTACAGC 5:	Db Qy
172 210	413 CACAGCACCATCGCTGAGAATGGCTTTACTGGCTCAGTCCCCCAACATCCCCCACTGAGATG 4.	Оy
112 190	356 GCGTCGTCCGTGTGAACAGCGCACCCGGCTCCGGCCCCAGCTCTCCCAACAGCTCC 4:	Дy
355 L71	296 GGGACTGTTATTAGCACCTTTAAGAAGAGAGCTGTTGAGATCACAGGTGCCGGGCCTGGG 3:	Qу
295 156	236 TCAAGGCTAAAACAGAAGGTGGCTGAGCGGAGAAGCAGTCCCCTCCTGCGTCGCAAGGAT 29 	Db Qy
235	176 GACAGTCGAGACGACTTCCCCCTCCGCAAAACAGCCTCTGAACCCCAACTTGAAAGTGCGT 2:	Qу
175 116	116 CCCCAGAGCGGCCCCCTGGGACGCCTCCCTACAAACTGCCTTTGCCTGGGCCCTAC 17	ОУ
115 99	62 CAGCACCCCAAATGCTGGGGAGCCCACCATGCTTCTTTGGACCAGAGTTCCCCT 1:	Фр
61 79	2 GAATTCCTCTTGTCGAAGTCAAAGGAGCCCACACCAGGCGGCCTCAACCATTCCCTCCC	Qy Db
	-502-945-2 (1-2885) x US-09-817-913-7 (1-967)	US-09
	Local Similarity: 59.00% Mismatches: 196 y Match: 50.22% Indels: 81 10 Gaps: 23	Best 1 Query DB:

Db Qy	Qу	Оу	Qy Db	Qy Db	Оy	Qy Db	Qy Db	Qy Db	Оу	Qy	Qу Db	Фр	Qy Db	Qy Db	Qy Db	Qy Db	Ωy
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TTCTGCTTCTAACTCTGTAGCCATCACCGCAAAACTCCTACAGCAGAAGTTGAACGTG 202 ::: :::	AATGGATTTGCCATCATCCGGCCCCAGGACACCACGCCGAGGAATCCACAGCCATGGGA 196 ::::::	CGCATGGCAGTGGGCTGCCTGCAGGAGCTGGCCTTCAAGGTGGCTGCAGGAGAGCTCAAG 190 :::	184	CTAGACAGCAAGAAGTTGCTCGGTCCCATCAGCCAGAAGATGTATGCTGTGCTGCCTTGT 178	ACAGTGCACTCTGAATACCACACCCTGCTCTATGGGACCAGTCCCCTCAACCGGCAGAAG 172 	GGCCTGCTTAGCAAGTGCGAGCGGATCCGAGGTCGCAAAGCCACGCTAGATGAGATCAG 166 	CACGTGCACCCTGAGCATGCTGGCCGGATCCAGAGCATCTGGTCCCGGCTGCAGGAGACA 160	ACCACAAGTGTGGTCTACGACACGTTCATGCTAAAGCACCAGTGCATGTGCGGGAACACA 154 :::	GCCCCTGGGGGCATGAAGAACCCCCCAGACCAACCCGTCAAGCACCTCTTC 148 ::::	ACTGTGCCC	TTCTCAGATGCCCAACCGCTGCAACCTTTGCAGGTGTACCAAGCGCCCCTCAGCCTGGCC 138 :: :: ::	GAGAGTGGTGCTGAGGAGGGGCCCGACTTGGAGGAGCCTGGTGCTGGATACAAAAAACTG 132 :: :: :: ::	GACGAGGAAGAGGATGGGAGGAGGAGGAGGATTGCATCCAGGTTAAGGACGAGGAGGAGGGC 126	ACCATGCCCCGGGAGGGCTCCACAGAGAGTGAGAGCACACAGGAAGACCTGGAGGAGGAG 120 ::: :: :::::: ArgLeuProGlyGlnLysGluAlaHisAlaGlnAlaGlyValGlnValLysGlnGlu 444	GAGACAGAGGAGGAGCTGACGGAGCAGCAGGAGGTCTTGCTGGGGGAGGGA	CTGGGCAAGATCCTCACCAAGACAGGGGAGCTGCCCAGGCAGG	CAACAGCACCAGCAGTTCCTGGAGAAGCAGAAGCAGCAGCAGCAGCTACAG 1027
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GENERAL INFORMATION:
APPLICANT: L1, Zuomei
APPLICANT: Bonfils, Claire
APPLICANT: Besterman, Jeffrey
TITLE OF INVENTION: Antisense Oligonucleotide Ini
TITLE OF INVENTION: Deacetylase Isoforms
FILE REFERENCE: 106101.144
CURRENT APPLICATION NUMBER: US/09/817,538
CURRENT FILING DATE: 2001-03-26
PRIOR APPLICATION NUMBER: US 60/192,157
PRIOR FILING DATE: 2000-03-24
                                                                                                                                                                   RESULT 7
US-09-817-538-7
                                                                                                                                              Sequence 7, Application US/09817538 Patent No. US20020137162A1
   SOFTWARE:
            NUMBER OF
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US-09-502-945-2 (1-2885) x US-09-817-538-7 (1-967)
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                                                                             LeuAspSerLysLysLeuLeuGlySerLeuAla---SerValPheValArgLeuProCys
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RESU US-1 ; Se ; Pul ; GE ; A: ; A:	Оy	Db 43	DЬ	Qy	Ωy	Db	Qy	Qу	рb	Db	рb	Qy	Qy Db	Оу Db	Qу Db	Db	Q	Оу	Db	οy	ДУ	Db
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:-094-87 :e 87, Application US/10072094 tion No. US20030025538A1 , INFORMATION: ANT: JACKSON, DONALD :ANT: LORENZI, MATTHEW	CTG 2802 	LysArgProAspGluGluProMetGluGluGluProPro 966		AAGCCGAAAT-GTGAACGCCATGGCCTTGCTGTTGGTGGGGGGCCGAACAGGCCCA	CAGAAGTTCGCCGCTGGTCTGGGCCGGTCCCTGCGAGGGGCCCAAGCAGGTGAGACCGAA 2680 :::	:::	CGCAGTGGCCACGCTAGAGAAAGTCATCGAGATCCAGAGCAAACACTGGAGCTC	CTGCTCAGTGTAAAGCTGCAGCCCTTGGATGAGGCAGTCTTGCAGCAAAAAGCCCCAACATC 2560	CTGGAGGGAGGCCATGACTTGACCGCCATCTGTGATGCCTCTGAAGCTTGTGTCTCCGGCT 2500	TGTTTTGGCCACGTGACCAGGCAGCTGATGACCCTGGCAGGGGGCCGGGTGGTGGTGGCC 2440 [:::	lyPheAspAlaValGluGlyHisProThrProLeuGlyGlyTyrAsnLeuSerAlaArg 834	TGTTGAAGGACATCTGTCTCCTCTGGGTGGCTACTCTGTCACCGCCAG	AGGACAGTGGTGATGCCCATTGCCCACGAGTTCTCACCTGATGTGGTCCTAGTCTCCGGC 2320	GTGGCATGGACAGGAGGTGTGGACCCCCCCATTGGAGACGTGGAGTACCTTACAGCCTTC 2260 ::: :::	CCAGGCTCTGGGGCTCCTGAAGAGGTTGGTGGAGGACCAGGCGTGGGGTACAATGTGAAC 2200	:	21	GGCAAGGTCCTCATCGTGGACTGGGACATTCACCATGGCAATGGCACCCAGCAGCGGGTTC 2080 :::	⊢	TCTGCTTCTTCAACTCTGTAGCCATCACCGCAAAACTCCTACAGCAGAAGTTGAAC	AATGGATTTGCCATCATCCGGCCCCCAGGACACCACGCCGAGATCCACAGCCATGGGA 1960 :::::	rgLeuAlaValGlyCysValValGluLeuValPheLysValAlaThrGlyGluLeuLys 674

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APPLICANT: ATTAR, RICARDO
APPLICANT: GOTTARDIS, MARCO
TITLE OF INVENTION: NOVEL HUMAN HISTONE PEPTIDES
FILE REFERENCE: 3053-4145US1
CURRENT APPLICATION NUMBER: US/10/072,094
CURRENT FILING DATE: 2002-06-14
PRIOR APPLICATION NUMBER: 60/298,296
PRIOR FILING DATE: 2001-66-14
NUMBER OF SEQ ID NOS: 127
SOFTWARE: PATENTIN OFF. 2.1
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; TYPE: PRT
; ORGANISM: Homo sapiens
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                                               GlyLeuProAla------ValProSerGlnLeuAsnAlaSerAsnSerLeuLys 351
                                                            GGGCTGCAGGCCACGGTCACTGTCACCACACCTCACTGCCTCCCCGAAGCTGTCG 619
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GAGATCCAGACAGTGCACTCTGAATACCACACCCTGCTCTATGGGACCAGTCCCCTC 1	49 GATGAGATCC	Qy
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ACCCAATCCTCCCCTGCTGCCCCTGGGGGCATGAAGAACCCCCCAGACCAACCCGTC 1	9 CGTACCCAAT	Qу
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CAAGCGCCCCTCAGCCTGGCCACTGTGCCCCACCAAGCCCT	61 TACCAAGCGC	Qу
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AAACTGTTCTCAGATGCCCAACCGCTGCAACCTTTGCAGGT	AAAAACTGT	Qy
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CAGCTACAGCTGGGCAAGATCCTCACCAAGACAGGGGAGCTGCCCAGGCAGCCC	AGCAGCTAC	Qy
GlnLeuValIleGlnGlnGlnHisGlnGlnPheLeuGluLysGlnLysGlnTyrGl	63 AlaGlnLeu	ф
CAGCTGGTCATGCAACAACAGCACCAGCAGTTCCTGGAGAAGCAGCAGAGCA	2 CAGCAGCTG	Qy
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ATCGGCCCCTGAGCCGCACTCAGTCCTCACCGCTGCCGCAGAGTCCCCCAG	CGGCATCGC	Qy
ProLeuAlaThrLysGluArgIleSerProGlyIleArgGlyThrHisLysLeuF	rProLe	рь
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AAGTTCATGAGCACATCCTCTATTCCTGGCTGCCTGCTGGGC	GCAAGTTC-	Qy

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                                       CAGGCCCAAGCTGCGGCAGCCCGGGAACACACCCCCAGGCCGGCAGAGGAGCCCATGGAG
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                                                           -GlnGluGluThrGluThrValSerAlaLeuAlaSerLeuThrValAspValGlu
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APPLICANT: JACKSON, DONALD
APPLICANT: LORENZI, MATTHEW
APPLICANT: LORENZI, MATCHEW
APPLICANT: ATTAR, RICARDO
APPLICANT: ATTAR, RICARDO
TIFLE OF INVENTION: NOVEL HUMAN HISTONE PEPTIDES
FILLE RETERENCE: 3053 4145US1
CURRENT APPLICATION NUMBER: US/10/072,094
CURRENT FILING DATE: 2002-06-14
PRIOR APPLICATION NUMBER: 60/298,296
PRIOR FILING DATE: 2001-06-14
NUMBER: 05 EEQ ID NOS: 127
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: PRT
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                                ValLeuProProThrProHisAlaGluGlnMetValSerGlnGlnArgIleLeuIleHis
                                                                 ATGCTCCCT---
                                                                                                                  TCCCACAGCACCATCGCTGAGAATGGCTTTACTGGCTCAGTCCCCAACATCCCCCACTGAG
                                                                                                                                                                  ----GluSerSerValSerSerSerSerProGlySerGlyProSerSerProAsn---
                                                                                                                                                                                              CCTGGGGCGTCGTCGTGTGTAACAGCGCACCCGGCTCCGGGCCCCAGCTCTCCCCAACAGC
                                                                                                                                                                                                                                     LysaspGlyasnValValThrSerPheLysLysargMetPheGluValThr---
                                                                                                                                                                                                                                                                      AAGGATGGGACTGTTATTAGCACCTTTAAGAAGAGAGCTGTTGAGATCACAGGTGCCGGG
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er 1005	88 SerProAsnMetAsnAlaValIleSerLeuGlnLysIleIleGluIleGln	98	므
	49 AAGCCCAACATCAACGCAGTGGCCACGCTAGAGAAAGTCATCG	25	Qγ
euHisGln 987	68 CysValAsnAlaLeuLe	9	멅
GCAGCA	89 TGTGTCTCGGCTCTGCTCAGTGTAAAGCTGCAGCCCTTGGATGAGGCAGTC	24	8
erGluAla 967	48 ValValLeuAlaLeuGluGlyGlyHisAspLeuThrAlaIleCysAspAlaS	9	Db
TGAAGC	29 GTGGTGGTGGCCCTGGAGGGAGGCCATGACTTGACCGCCATCTGTGATGCCT	24	80
spGlyArg 947		9	Д
9229999	69 GTCACCGCCAGATGTTTTGGCCACTTGACCAGGCAGCTGATGACCCTGGCAG	, 23	δ O
lyTyrLys 927	08 LeuValSerAlaGlyPheAspAlaLeuGluGlyHisThrProProLeuGlyG	9	D,
CTAC	09 CTAGTCTCCGCCGGGTTTGATGCTGTTGAAGGACATCTGTCTCCTCTGGGTG	23	δ
spMetVal 907		8	맖
TGTO	49 CTTACAGCCTTCAGGACAGTGGTGATGCCCATTGCCCACGAGTTCTCACCTG	22	δδ
alGluTyr 887	68 TyrAsnIleAsnIleAlaTrpThrGlyGlyLeuAspProProMetGlyAspV	8	ф
GGAGT	89 TACAATGTGAACGTGGCATGGACAGGAGGTGTGGACCCCCCCATTGGAGACG	, 21	Qy
lyGluGly 867	48 GlyAsnPhePheProGlySerGlyAlaProAsnGluValGlyThrGlyLeuG	8	Db
GCGTGGG	.29 GGGAACTTCTTTCCAGGCTCTGGGGCTCCTGAAGAGGTTGGTGGAGGACCAG	. 21	Q VQ
yrAspGlu 847		80	ДD
TGA	69 CAGCAGGCGTTCTACAATGACCCCTCTGTGCTCTACATCTCTCTGCATC	20	δÕ
snGlyThr 827	808 GlnLeuAsnIleSerLysIleLeuIleValAspLeuAspValHisHisGlyAs	8	맖
TGGCAC	09 AAGTTGAACGTGGGCAAGGTCCTCATCGTGGACTGGGACATTCACCATG	20	Qγ
euArgAsp 807	88 ThrAlaMetGlyPheCysPhePheAsnSerValAlaIleThrAlaLysTyrL	7	Db
ACA	49 ACAGCCATGGGATTCTGCTTCTTCAACTCTGTAGCCATCACCGCAAAACTCC	. 19	Qy
luGluSer 787	68 GlyGluLeuLysAsnGlyPheAlaValValArgProProGlyHisHisAlaG	, 7	DЬ
GAATC	89 GGAGAGCTCAAGAATGGATTTGCCATCATCCGGCCCCCAGGACACCACGCCC	18	Qy
ValAlaSer 767	48 SerGlyAlaAlaArgMetAlaValGlyCysValIleGluLeuAlaSerLys	7	:: Д
GCTGC	29 TCCAGTGCTGTGCGCATGGCAGTGGGCTGCCTGCTGGAGCTGGCCTTCAAC	. 18	Qγ
euHisSer 747	28 SerLeuProCysGlyGlyLeuGlyValAspSerAspThrIleTrpAsnGluL	7	ДЬ
GCACTC	69 GTGCTGCCTTGTGGGGGCATCGGGGTGGACAGTGACACCGTGTGGAATGAGA	, 17	γQ
hePheSer 727	08 AspGlyGlnLysLeuAspProArgIleLeuLeuGlyAspAspSerGlnLysP	7	Db
ATGC	09 AACCGGCAGAAGCTAGACAGCAAGAAGTTGCTCGGTCCCATCAGCCAGAAG	. 17	δ
snProLeu 707	88 GluGluIleGlnLeuValHisSerGluHisHisSerLeuLeuTyrGlyThrA	6	Db
TCCCC	49 GATGAGATCCAGACAGTGCACTCTGAATACCACACCCTGCTCTATGGGACCA	16	δŌ
ll::: laSerLeu 687	68 LeuGlnGluThrGlyLeuLeuAsnLysCysGluArgIleGlnGlyArgLysA	6	Db
CACGCT	89 CTGCAGGAGACAGGCCTGCTTAGCAAGTGCGAGCGGATCCGAGGTCGCAAAG	15	Qy
rpserarg oo/	648 CysGlyAsnSerThrThrHisProGluHisAlaGlyArglieGinSerlieTr	6	B

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APPLICANT: JACKSON, DONALD
APPLICANT: LORENZI, MATTHEW
APPLICANT: ATTAR, RICARDO
APPLICANT: ATTAR, RICARDO
TITLE OF INVENTION: NOVEL HUMAN HISTONE PEPTIDES
FILE REFERENCE: 3053-4145US1
CURRENT APPLICATION NUMBER: US/10/072,094
CURRENT FILING DATE: 2002-06-14
PRIOR APPLICATION NUMBER: 60/298,296
PRIOR APPLICATION NUMBER: 60/298,296
PRIOR FILING DATE: 2001-06-14
NUMBER OF SEQ ID NOS: 127
SOFTWARE: PATENTIN VGT. 2.1
SEQ ID NO 93
LENGTH: 780
TYPE: PRT
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Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; ORGANISM: Homo sapiens US-10-072-094-93
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GENERAL INFORMATION:
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                                                {\tt GlyValProLeuHisProGlnSerProLeuAlaThrLysGluArgIleSerProGlyIle}
                                                                                                                                                                                                             CTGCTGCAGCATGTGCTGTTGCTGGAGCAGGCCCGGCAGCAGCAGCACCCTCATTGCT---
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Qy	1055	GAGCTGCCCAGGCAGCCCACCCACCCTGAGGAGCAGAGGAGGAGGAGGAGGAGCTGACGGAGCAG 1114	
Db	207	GluGlnLeuLysGlnProGlySerHisLeuGluGluAlaGluGluGluLeuGln 224	
Qy	1115	GTCTTGCTGGGGAGGGAGCCCTGACCATGCCCCGGGAGGGCTCCACAGAG	
Db	225	AlaProSerSe	
Qy	1175	AGCACACAGGAAGAACCTGGAGGAGGAGGAGGAAGGAAGG	
Db	239		
Qy	1235	CCAGGTTAAGGACGAGGAGGGCGAGAGTGGTGCTGAGGAGGGGCCCGACTT	
Db	257	GlyAlaValLysValLysGluGluProValAspSerAspGluAspAlaGlnIle 274	
Qy	1295	AGGAGCCTGGTGCTGGATACAAAAAACTGTTCTCAGATGCCCAACCGCTGCAACCT	
Db	275	luProT	
Qy	1352	CCCCTCAGCCTGGCCACTGT	
Дb	295	HisThrArgAlaLeuSerValArgGlnAlaProLeuAlaAlaValGlyMetAspGlyLeu 314	
Qy	1391	CACCAAGCCCTGGGCCGTACCCAATCCTCCCCTGCTC	
Db	315	GluLysHisArgLeuValSerArgThrHisSerSerProAlaAlaSerValLeuProHis 334	
Qy	1448	SACCAACCCGTCAAGCACCTCTTCACCACAAGTGTGGTCTACC	
DЪ	335	ProAlaMetAspArgProLeuGlnProGlySerAlaThrGlyIleAlaTyrAspProLeu 354	
Qy	Ó	AGTGCATGTGCGGGAACACACACGTGCACCCTGAGCATGCTGGC	
DЪ	355	MetLeuLysHisGlnCysValCysGlyAsnSerThrThrHisProGluHisAlaGlyArg 374	
Qy	1568	ATCCAGAGCATCTGGTCCCGGCTGCAGGAGACAGGCCTGCTTAGCAAGTGCGAGCGGATC 1627	
Db	375	eGlnSerIleTrpSerArgLeuGlnGluThrGlyLeuLeuAsnLysCysGluArc	
Qy	Ñ	CGAGGTCGCAAAGCCACGCTAGATGAGATCCAGACAGTGCACTCTGAATACCACACCCTG 1687	
Db	395	lnG1yArgLysAlaSerLeuGluGluIleGlnLeuValHisSerGluHisHisSerI	
Qy	8	CTCTATGGGACCAGTCCCCTCAACCGGCAGAAGCTAGACAGCAAGAAGTTGCTCGGTCCC 1747	
Db	415	LeuLeuC	
Qy	1748	CAGCCAGAAGATGTATGCTGTGCTGCCTTGTGGGGGCATCGGGGTGGACAGTGACACC 1	
Db	435	serSerLeuProCysGlyGlyLeuGlyValAspSerAs	
Qy	1808	GTGTGGAATGAGATGCACTCCTCCAGTGCTGTGCGCATGGCAGTGGGCTGCTGCTGCAG 1867	
Db.	455	┍.	
Qy	1868	CTGGCCTTCAAGGTGGCTGCAGGAGAGCTCAAGAATGGATTTGCCATCATCCGGCCCCCA 1927	
Db	475	AsnGlyPheAlaValValArgProPr	
Qy		GGACACCACGCCGAGGAATCCACAGCCATGGGATTCTGCTTCTTCAACTCTGTAGCCATC 1987	
Db	495	lyHisHisAlaGluGluSerThrAlaMetGlyPheCysPhePheAsnSerValAla	
Ωy	æ	CTACAGCAGAAGTTGAACGTGGGCAAGGTCCTCATCGTGGACTGGGAC 20	
DЪ	\vdash	rAlaLysTyrLeuArgAspGlnLeuAsnIleSerLysIleLeuIleValAspLeuAsp 53	
Qy	4	ATGACCCCTCTGTGCTCTACATC 21	
В	535	alHisHisGlyAsnGlyThrGlnGlnAlaPheTyrAlaAspProS	

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RESULT 11
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                                                                                                                SOFTWARE: PatentIn Ver. SEQ ID NO 107
                                                                                                                                                                                                                                                                                                                                                    Sequence 107, Application US/10072094 Publication No. US20030025538A1
                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/10/072,094
CURRENT FILING DATE: 2002-06-14
                                                                                                                                                                                                                                APPLICANT: GOTTARDIS, MARCO
TITLE OF INVENTION: NOVEL HUMAN HISTONE PEPTIDES
FILE REFERENCE: 3053-4145US1
                                                                                                                                                                                                                                                                                 APPLICANT: JACKSON, DONALD APPLICANT: LORENZI, MATTHI APPLICANT: ATTAR, RICARDO
                                                                                                                                                   PRIOR FILING DATE: 2001-06-14
NUMBER OF SEQ ID NOS: 127
                                                                                                                                                                                   PRIOR APPLICATION NUMBER: 60/298,296
                                                                                 LENGTH: 11
TYPE: PRT
            OTHER INFORMATION: Descript: OTHER INFORMATION: sequence
                                                ORGANISM: Artificial Sequence FEATURE:
FEATURE:
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| AlaGluAspIleLeuHisGlnSerProAsnMetAsnAlaValIleSerLeuGlnLysIle 714
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCTGTGATGCCTCTGAAGCTTGTGTCTCCGCCTCTGCTCAGTGTAAAGCTGCAGCCCCTTG 2527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AlaLeuAlaGlyAlaGlnLeu-----GlnGluGluThrGluThrValSerAlaLeuAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IleGluIleGlnSerLysTyrTrpLysSerValArgMetValAlaValProArgGlyCys 734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IleCysAspAlaSerGluAlaCysValAsnAlaLeuLeuGlyAsnGluLeuGluProLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GluPheAspProAspMetValLeuValSerAlaGlyPheAspAlaLeuGluGlyHisThr 634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ProMetGlyAspValGluTyrLeuGluAlaPheArgThrIleValLysProValAlaLys 614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCCATTGGAGACGTGGAGTACCTTACAGCCTTCAGGACAGTGGTGATGCCCCATTGCCCAC
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                               Description of Artificial Sequence: Consensus
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OTHER INFORMATION:
                           NAME/KEY: MOD_RES
LOCATION: (104)
                                                                          OTHER INFORMATION:
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LOCATION: (95)
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LOCATION: (86)
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OTHER INFORMATION:
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OTHER INFORMATION: Unknown consensus marker
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LOCATION: (43)..(46)
OTHER INFORMATION: Unknown
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LOCATION: (35)..(37)
OTHER INFORMATION: U
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LOCATION: (29)..(30)
OTHER INFORMATION: Unknown
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NAME/KEY: MOD_RES
LOCATION: (26)..(
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LOCATION: (15)..(16)
OTHER INFORMATION: U
EATURE:
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LOCATION: (74)
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OTHER INFORMATION: Unknown
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OTHER INFORMATION: Unknown
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OTHER INFORMATION:
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LOCATION: (21)..(24)
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LOCATION: (2)
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               Unknown consensus marker
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FEATURE:

NAME/KEY: MOD_RES

TOTATION: (119)
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LOCATION: (126)
OTHER INFORMATION:
                                        LOCATION: (205)
OTHER INFORMATION:
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OTHER INFORMATION:
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LOCATION: (169)
OTHER INFORMATION:
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OTHER INFORMATION:
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LOCATION: (163)
OTHER INFORMATION:
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LOCATION: (158)..(160)
OTHER INFORMATION: Unk
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LOCATION: (147)..(148)
OTHER INFORMATION: Unknown
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NAME/KEY: MOD_RES
LOCATION: (143)..(144)
OTHER INFORMATION: Unknown
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LOCATION: (134)..(138)
OTHER INFORMATION: Unk
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LOCATION: (128)
OTHER INFORMATION:
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OTHER INFORMATION:
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NAME/KEY: MOD_RES LOCATION: (208)
                            FEATURE:
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LOCATION: (185)
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OTHER INFORMATION: Unk
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OTHER INFORMATION: Unknown
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LOCATION: (238)..(240)
OTHER INFORMATION: Unk
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LOCATION: (243)..
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LOCATION: (232)
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LOCATION: (223)
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329
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                                                                                                                    290 AAGGATGGGACTGTTATTAGCACCTTTAAGAAGAGAGCTGTTGAGATCACAGGTGCCGGG
                                                                                                                                                              269
                                                                                                                                                                                                               249 ******AspAlaLysAspAspPheProLeuArgLysThrAlaSerGluProAsnLeuLys
                                                                                                                                                                                                                                                                                  230 GTGCGTTCAAGGCTAAAACAGAAGGTGGCTGAGCGGAGAAGCAGTCCCCTCCTGCGTCGC
                                                                                                                                                                                                                                                                                                                          209 Val********ProLys***TrpTyr********His***SerLeuAspGlnSer
                                                                                                                                                                                                                                                                                                                                                  56 CTCCCACAGCACCCCAAATGCTGG-----GGAGCCCACCATGCTTCTTTGGACCAGAGT
                                                                                                                                                                                                                                                                                                                                                                                          2 GAATTCCTCTTGTCGAAG-----TCAAAGGAGCCCACACCAGGCGGCCTCAACCATTCC
                                                                                                                                                          CCCTACGACAGTCGAGACGACTTCCCCCTCCGCAAAACAGCCTCTGAACCCCAACTTGAAA
                                                  SerProPro***SerGlyProProGly*******SerTyr*******Leu***Gly
                                                                                                      LysAspGly***ValValThr******LysLysArg******GluValThrGlyAlaGly
                       ---TCCCACAGCACCATCGCTGAGAATGGCTTTACTGGCTCAGTCCCCAACATCCCCACT
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55.51%
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Gaps:
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Matches:
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708	***Pro*********************************	689	Db
1504	GAACCCCCCAGACCAACCCTCAAGCACCTCTTCACCACAAGTGTGGTCTACGAC	1445	Qy
688	***Arg*****SerSerProAlaAla********	669	Ъ
1444	TGTGCCCCACCAAGCCCTGGGCCGTACCCAATCCTCCCCTGCTGCCCCTGGGGGCATG	1385	Qy
668	**************************************	649	Вр
1384	ACCAAGCGCCCCTCAGCCTGGCC	1325	Qy
648	*******************	629	Вb
1324	GGCCCGACTTGGAGGAGCCTGGTGCTGGATACAAAAAACTG	1268	Qy
628	**********************	609	Ъ
1267	AGGAGGAGGAGGATTGCATCCAGGTTAAGGACGAGGAGGGCGAG	1223	ОУ
808	*****	589	В
1222	GTGAGAGCACACAGGAAGACCTTGGAGGAGGAGGACGAGGAAGAGGATGGG	1163	δÃ
588	*******Gln*****************************	569	В
1162	AGCAGGAGGTCTTGCTGGGGGAGGGAGCCCTGACCATGCCCCGGGAGGGC	1103	Qy
568	***SerHis***GluGlu***GluGlu	549	В
1102	GGAGCTGCCCAGGCAGCCCACCCACCCTGAGGAGAGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGA	1043	Qy
48	 Lys***Leu	2	문
1042	TCCTGGAGAAGCAGAAGCAGCAGCAGCTACAGCTGGGCAAGATCCTC	995	Qy
	****Gln***Leu******LeuValIleGlnGlnGlnHisGlnGln	509	В
994	CGCTGCCGCAGAGTCCCCAGGCCCTGCAGCAGCTGGTCATGCAACAACAGCACCAGCAG	935	Qγ
508	:::	489	Db
934	ATGCGGACGGTAGGCAAGCTCCCGCGGCATCGGCCCCTGAGCCGCACTCAGTCCTCA	875	Qy
488	***GlyGlyValProLeuHis***GlnSerProLeu********GluArgIleSer***	469	В
874	GGTGAACGTGTGGCCACC	821	Qy
468	********Gln******LeuValThrGly	449	Db
820	CAGCAGAGCACCCTCATT	767	Qy
448	*	429	ф
766	CCTCC	707	Qy
428	****	409	В
706	TCCCTGCGGCAGGGTGGCACGCTGACCGGCAAGTTCATGAGCACATCCTCTATT	647	Qy
408	******LysLeuSerThrGlnGlnGlu******Lys*****	389	В
646	CTGCCTCCCCGAAGCTGTCGACACAGCAGGAGGCCGAGAGGCAGGC	587	Qy
388	******* <u>"N</u> C************************************	369	Db
586	TTTCTCTGCCCAACATCTCCCTAGGGCTGCAGGCCACGGTCACTGTCACC	527	Qy
368	Glu************************************	349	DЬ
526	ACCGAGCCCTCCCTCGGACAGCTCCCCCAACCAGTTCAGCCTC	467	Qy

2585	
Qy 2525 TTGGATGAGGCAGTCTTGCAGCAAAAGCCCAACATCAACGCAGTGGCCACGCTAGAGAAAAGCCCAACATCAACGCAGTGGCCACGCTAGAGAAAAGCCCAACATCAACGCAGTGGCCACGCTAGAGAAAAAGCCCAACATCAACGCAGTGGCCACGCTAGAGAAAAAGAAAAGAACATCAACGCAGAGAAAAAGAAAAAGAAAAAGAAAAAAGAAAAAA	
102	-
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989	
Qy 2345 CTGTCTCCTCTGGGTGGCTACTCTGTCACCGCCAGATGTTTTGGCCACTT	
QY 2285 CACGACTTCICACCTGATGTGCTCCGCGGGGTTTGATGCTGTTGAAGGACAT Db 969 ***GluPhe***ProAspMetValLeuValSerAlaGlyPheAspAlaLeuGluGlyHis	
949	
Qy 2225 CCCCCCATTGGAGAGGTGGAGGAGTGACCTTACAGCCTTCAGGACAGTGGTGATGCCCATTGCC	
Db 929 Val************************************	
Qy 2165 GTTGGTGGAGGACCAGGCGTGGGGTACAATGTGAACGTGGCATGGACAGG	
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2105	
204	
Qy 1985 ATCACCGCAAAACTCCTACAGCAGAAGTTGAACGTGGGCAAGGTCCTCAT	
Qy 1925 CCAGGACACCACGCCGAGGAATCCACAGCCATGGGATTCTGCTTCTTCAACTCTGTAGCC	
Db 829 GluLeu******LysValAla***GlyGluLeuLysAsnGlyPheAlaValValArgPro	
QY 1865 GAGCTGGCCTTCAAGGTGGCTGCAGGAGAGCTCAAGAATGGATTTGCCAT	
Qy 1805 ACCGTGTGGAATGAGATGCACTCCTCCAGTGCTGTGCGCATGGCATGGCCTGCTGCTG ::: :::	
789	
Qy 1745 CCCATCAGCCAGAAGATGTATGCTGTGCTGCCTTGTGGGGGCATCGGGGTGGACAGTGAC	· -
Qy 1685 CTGCTCTATGGGACCAGTCCCCTCAACCGGCAGAAGCTAGACAGCAAGAA	
7	
Qy 1565 CGGATCCAGAGCATCTGGTCCCGGCTGCAGGAGACAGGCCTGCTTAGCAAGTGCGAGC	
9	
QY 1505 TTCATGCTAAAGCACCAGTGCATGTGCGGGAACACACACGTGCACCCTGAGCATGCTGGC	

LeuSer	072-094-90AAGGAGAAGGAGGAAGGAGGA	S- re co co er er	79 PASSICIPEN 79	RESULT 12 US-10-072-094-90 ; Sequence 90, Application US/10072094 ; Publication No. US20030025538A1 ; GENERAL INFORMATION: ; APPLICANT: JACKSON, DONALD ; APPLICANT: LORENZI, MATTHEW ; APPLICANT: LORENZI, MATTHEW	Qy 2704 GCCTTGCTGTGGTGGGGGCCCAACAGGCCCAAGCTGCGGCAACCAGCCCGGGAACACAGCCCC 2763 II	::: Db 1069 IleIleGluIle***Ser********************************
0 D D O O O O O O O O O O O O O O O O O	DD QY DD	0	0	О О О О О		Db Qy
GAGGAGGAGGAGGAGGAGGATGGGGAGGAGGAGGAGGAGG	460 AlaGlnLeuVallleGlnGlnHisGlnGlnPheLeuGluLysGlnLysGlnTyrGln 479 1016 CAGCAGCTACAGCTGGGCAAGATCCTCACCAAGACAGGGAGCTGCCCAGGCAGCCCACC 1075 1111 1:::	TCCCCACTAGTGACGGTGAACGTGTGGCCACCAGCATGCGGACGGTAGGCAAGCTCCCG [680 GGCAAGTTCATGAGCACATCCTCTATTCCTGGCTGCTGCTGGCGTG 727	560 GGGCTGCAGGCCACGGTCACTGTCACCAACTCACACCTCACTGCCTCCCCGAAGCTGTCG 619	470 ATGCTCCCTCAGCACCGAGCCCTCCCTTG 499 ::: 293 ValLeuProProThrProHisAlaGluGlnMetValSerGlnGlnArgIleLeuIleHis 312 500 GACAGCTCCCCCAACCAGTTCAGCCTCTACACGTCTCCTTCTCTGCCCAACATCTCCCTA 559 :::	::: :::

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RESULT 13
US-10-072-094-9
PRIOR APPLICATION NUMBER: 60/298,296
PRIOR FILING DATE: 2001-06-14
NUMBER OF SEQ ID NOS: 127
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 9
LENGTH: 855
                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                  Sequence 9, Application US/10072094 Publication No. US20030025538A1
                                                                                            APPLICANT: JACKSON, DONALD
APPLICANT: LORENZI, MATTHEW
APPLICANT: ATTAR, RICANDO
APPLICANT: GOTTARDIS, MARCO
TITLE OF INVENTION: NOVEL HUMAN HISTONE PEPTIDES
FILE REFERENCE: 3053-4145US1
CURRENT APPLICATION NUMBER: US/10/072,094
CURRENT FILING DATE: 2002-06-14
CURRENT FILING DATE: 2002-06-14
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   HisPheAlaGinSerLeuMetThrThrGluArgLeuSerGlySer---GlyLeuHisTrp
                                                                                               GAGCAGGCCCGGCAGCAGCACCCCTCATTGCTGTGCCACTCCACGGGCAGTCCCCACTA
                                                                                                                                     ProGluAlaGlyGlyThr---
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1846 600	1787 ATCGGGGTGGACACTGTGACACCGTGTGGAATGAGATGCACTCCTCCAGTGCTGTGCGCATG ::: ::: :::	Db Qq
178 580	27 AGCAAGAAGTTGCTCGGTCCCATCAGCCAGAAGATGTATGCTGTGCTGCCTTGTGGGGGC :::	ОУ
172 560	1667 CACTCTGAATACCACACCCTGCTCTATGGGACCAGTCCCCTCAACCGGCAGAAGCTAGAC	Qу
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160 520	AGCATGCTGGCCGGATCCAGAGCATCTGGTCCCGGCTGCAGGAGACAGGCCTG 	. pp . 04
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1240 373	GAGGAGGAGGACGAAGAGGATGGGGAGGAGGAGGAGGATTGC	Дb
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359	61 CCCAGGCAGCCACCCACCCTGAGGAGAGAGAGGAGGAGCTGACGGAGCAGCAGGAG 	B 2
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                                             US-09-817-913-13
                                                                                      SOFTWARE: PatentIn version 3.1 SEQ ID NO 13
                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                     Sequence 13, Application US/09817913 Patent No. US20020061860A1
                                                                                                          APPLICANT: Li, Zuomei
APPLICANT: Bonfils, Claire
APPLICANT: Besterman, Jeffrey
APPLICANT: Besterman, Jeffrey
TITLE OF INVENTION: Inhibition of Specific Histone Deacetylase Isoforms
FILE REFERENCE: 106101.145
CURRENT APPLICATION NUMBER: US/09/817,913
CURRENT FILING DATE: 2001-03-26
PRIOR APPLICATION NUMBER: US 60/192,157
PRIOR FILING DATE: 2000-03-24
NUMBER OF SEQ ID NOS: 33
                                                      TYPE: PRT
ORGANISM: Human
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CACACCAGGCGCCTCAACCATTCCCTCCACAGCACC	Qy 947 AGTCCCCAGGCC	Qy 887 GTAGGCAAGCTCCCGCGG Db 305 SerGlySerGlyLeu	Qy 827 CCACTCCACGGGCAGTCC 	Qy 767 CTGCTGCAGCATGTGCTG ::: Db 265 ArgLeuGlnProIleLeu	Qy /10GCTGCTGCTGCTGGGC Db 259 GlyGlyCysLeu	671 ACGCTGACCGGCAAGTTC ::: 239 ProIleLeuGlySerPro	611 AAGCTGTCGACACAGCAG	Qy 551 ATCTCCCTAGGGCTGCAG Db 221 ProlleLeuGly	219	TCCCTCTGGACAGCTCC	431 AATGG	Qy 371 AACAGCGCACCCGGCTCCG	185 SerLeuArgArgArgF	CCTTTAAGAAGA	Qy 251 AAGGTGGCTGAGCGGAGA 	Qy 191 TTCCCCCTCCGCAAACAG	141 ProSerAspProProGl	Qy 131 CCTGGGACGCCTCCCTCC	Qy 71 AAATGCTGGGGAGCCCACCA ::: Db 121 GluThrGluGlyAlaThrAr	TITETCGAAGTCAAAGGAG :::::: 1 LeuGluArgThrValHis	
	TGCAGCAGCTGGTCAT	TCGGCCCCTGAGCCGCACTCAGTCCTCACCGCTGCCGC	ACTAGTGACGGGTGAACGTGTGGCCACCAGCATGCGGAC 	GAGCAGGCCCGGCAGCAGAGCACCCTCATTGCTGT ::: ::: AspProSerGlySerHisAlaProLeuLeuThrVa	GCACTGGAGGGCGACGGGGAGCCCCCACGGGCATGCCTC	TGAGCACAFCCTCTATTCCT	GAGAGGCAGGCCCTCCAGTCCCTGCGGCAGGGTGG ::: ::: AspArgArgThrHisProThrLeuGlyProArgGl	ACGGTCACTGTCACCAACTCACACCTCACTGCCTCCCC		44 CONDITION OF THE PROPERTY O	TCCCCAACATCCCCACTGAGATGCTCCCTCAGCACCGAGC	GCCCCAGCTCTCCCAACAGCTCCCACAGCACCATCGCTGA 1yCysSerSerProAsnAspSer	laGluThrLeuGlyAspSerSerProSerSerSer	TTGAGATCACAGGTGCCGGGCCTGGGGCGTCGTCCGTGTG	AGTCCCCTCCTGCGTCGCAAGGATGGGACTGTTATTAG::: ::::: snProLeuLeuArgLysGluSerAlaProPr	CCTCTGAACCCAACTTGAAAGTGCGTTCAAGGCTAAAACA ::: ::: alSerGluProAsnLeuLysLeuArgTyrLysProLys	18	TACAAACTGCCTTTGCCTGGGCCCTACGACAGTCG :::	TGCTTCTTTGGACCAGAGTTCCCCTCCCAGAGCGGCCC ::: gSerMetLeuSerSerPheLeuProProValProSerIl	CRCACCAGGGGCTCAACCATTCCCTCCCACAGCACCC ::: AsnSerProGlyILeProTyrArgThrLeuGluProIl	

1942 632	GCTGCAGGAGAGCTCAAGAATGGATTTGCCATCATCCGGCCCCCAGGACACCACGCCGAG ::: ::::::	1883 613	Qy Db	
1882 612	CACTCCTCCAGTGCTGTGCGCATGGCAGTGGCTGCCTGCAGCTTGGAGCTG	1823 593	Qy Db	
1822 592	TATGCTGTGCTGCCTTGTGGGGGCATCGGGGTGGACAGTGACACCGTGTGGAATGAGATG ::: ::: :::	1763 573	Qy Db	
1762 572	CCCCTCAACCGGCAGAAGCTAGACAGCAGGAAGTTGCTCGGTCCCATCAGCCAGAAGATG ::: ::: ProLeuSerargLeuLysLeuAspAsnGlyLysLeuAlaGlyIleIleAlaGlnArgMet	1703 553	Qy Db	
1702 552	ACGCTAGATGAGATCCAGACAGTGCACTCTGAATACCACACCCTGCTCTATGGGACCAGT:::::: ::: :::	1643 533	Qy Db	
1642 532	TCCCGGCTGCAGGAGACAGGCCTGCTTAGCAAGTGCGAGCGGATCCGAGGTCGCAAAGCC	1583 513	Qy Db	
1582 512		1523 493	Qy Db	
1522 492	GTCAAGCACCTCTTCACCACAAGTGTGGTCTACGACACGTTCATGCTAAAGCACCAG :::	1466 473	Qy Db	
1465 472	GGCATGAAGAACCCCCCAGACCAACCCC ::: SerIleSerAlaProGluProAlaSerGlnAlaArgValLeuSerSerGluThrPro	1439 453	Qу ДЪ	
1438 452	CTGGCCACTGTGCCCCACCAAGCCCTGGGCCGTACCCAATCCTCCCCTGCTGCCCCTGGG	1379 433	ду Db	
1378 432		1373 413	Qу Дъ	
1372 412	CGCTGCAACCTTTGCAGGTGTACCAAGCGCCC yproalaproLeuGlnGlnHisproGlnValileIleTrp	1331 395	Оу	
1330 394	TACAAAAAA Gln	127 4 379	Qy Db	
1273 378	GATGGGGAGGAGGAGGATTGCATCCAGGTTAAGGACGAGGAGGGCGAGAGTGGT AspGlyGlyGlyProGlyGln	1217 372	Qу Db	
1216 371	GAGGGCTCCACAGAGAGTGAGAGGCACACAGGAAGACCTGGAGGAGGAGGAGGACGAGGAGGAGGAGGAGGAGGAGGAG	1157 360	Оу	
1156 359	GAGGAGCTGACGGAGCAGCAGGAGGTCTTGCTGGGGGAAGGGAGCCCTGACCATGCCCCGG	1097 359	Qy Db	
359		352	Db	
1096	ATCCTCACCAAGACAGGGGAGCTGCCCAGGCAGCCACCACCCAC	1037	Qy	
1036 351	CAACAACAGCACCAGCAGTTCCTGGAGAAGCAGAAGCAGCAGCAGCTACAGCTGGGCAAG ::: ::::::::LysThrHisValGlnValIleLysArgSer	977 342	Qy Db	
341	SerAlaThrAlaProProProProGlyProMetGlnProArgLeuGluGlnLeu	324	Db	

Alig Pred Scor Perc Best	7 SE	 			RESULT US-09- ; Sequ ; Pate	Фy	Db Qy	Оу Об	Оy	ОУ	Qу	Qу	ОУ	Qу	Дy	ρ _γ
Alignment Scores: Pred. No.: Score: Score: Percent Similarity: Best Local Similarity:	PRT PRT PRT ISM: Human 13 1538-13	CURRENT AFFLICATION NUMBER: 05/9/81/, 3 CURRENT FILING DATE: 2001-03-26 PRIOR APPLICATION NUMBER: US 60/192,157 PRIOR FILING DATE: 2000-03-24 NUMBER OF SEC IN NOS. 23	TITLE OF INVENTION: Antisense Oligonucleo TITLE OF INVENTION: Deacetylase Isoforms FILE REFERENCE: 10610.144	GENERAL INFORMATION: APPLICANT: Li, Zuomei APPLICANT: Bonfils, APPLICANT: Besterman	RESULT 15 US-09-817-538-13 ; Sequence 13, Application US/09817538 ; Patent No. US20020137162A1	2534 GCAGTCTTGCAGCAAAAGCCC :::	2474 GATGCCTCTGAAGCTTGTGTCT	2414 CTGGCAGGGGGCC	2354 CTGGGTGGCTAC	2294 TCACCTGATGTG	2234 GGAGACGTGGAG 733 GlyAspProGlu	2174 GGACCAGGCGTG	2114 CATCGCTATGAC	2054 CATGGCAATGGC. 	2003 CAGCAGAAG ::: 653 GlnGlnGlnSer	1943 GAATCCACAGCC 633 HisSerThrAla
7.43e-75 1671.50 53.47% 42.34%	version 3.1	NUMBER: US/09/81 : 2001-03-26 :UMBER: US 60/192, 2000-03-24	INVENTION: Antisense Oligonucleotide INVENTION: Deacetylase Isoforms PRENCE: 106101.144	MATION: i, Zuomei Bonfils, Claire Besterman, Jeffrev	tion US/09817538 7162A1	CAAAAGCCC 2554 	GATGCCTCTGAAGCTTGTGTCTCGGCTCTGCTCAGTGTAAAGCTGCAGCCCTTGGATGAG 	CTGGCAGGGGGCCGGGTGGTGGTGGCCCTGGAGGGAGGCCATGACTTGACCGCCATGTGT	CTGGGTGGCTACTCTGTCACCGCCAGATGTTTTGGCCACTTGACCAGGCAGCTGATGACC 	TCACCTGATGTGGTCCTAGTCTCCGCCGGGTTTGATGCTGTTGAAGGACATCTGTCTCCT	GGAGACGTGGAGTACCTTACAGCCTTCAGGACAGTGGTGATGCCCATTGCCCACGAGTTC 	GGACCAGGCGTGGGGTACAATGTGAACGTGGCATGGACAGGAGGTGTGGACCCCCCCATT	CATCGCTATGACAACGGGAACTTCTTTCCAGGGTCTGGGGGTCCTGAAGAGGTTGGTGGA ::: :::	CATGGCAATGGCACCCAGCAGGCGTTCTACAATGACCCCTCTGTGCTCTACAATCTCTCTGTG	CAGCAGAAGTTGAACGTGGGCAAGGTCCTCATCGTGGACTGGGACATTCAC ::: ::: GlnGlnGlnSerLysAlaSerLysAlaSerLysTleLeuIleValAspTrpAspValHis	GAATCCACAGCCATGGGATTCTGCTTCTTCAACTCTGTAGCCATCACCGCAAAACTCCTA
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855 384 101 195			Inhibition of Specific				GCAGCCCTTGGATGA : : AspProLeuSerGl	CTTGACCGCCATCTG 	CAGGCAGCTGATGAC :::: rGlnGlnLeuMetAsı	AGGACATCTGTCTCC 	CATTGCCCACGAGTT	TGTGGACCCCCCAT ::: :: yLeuAspProProMe	TGAAGAGGTTGGTGG. ::: !AspGluValGlyAl	GCTCTACATCTCTCTCT(1)	GGACTGGGACATTCA :::: AspTrpAspValHi:	CACCGCAAAACTCCT.
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947 AG 324 Se	827 Ct 285 P. 887 Gt	767 C	710 259 G1:	671 Ac 239 Pı	611 A 225 -	551 A' 221 P	491 C 219 -	431 A : 217 H	371 A 203 -	311 A(: 185 S(251 A 167 L	191 T 148 P	131 CO 141 P	71 A : 121 G	11 T	Match: 502-945-2
947 AGTCCCCAGGC 324 SerAlaThrAl	827 Ct 285 P. 887 Gt	767 C	710 259 G1:	671 Ac 239 Pı	611 A 225 -	551 A' 221 P	491 C 219 -	431 A : 217 H	371 A 203 -	311 A(: 185 S(251 A 167 L	191 T 148 P	131 CO 141 P	71 A : 121 G	11 T	Match: 502-945-2
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1882 612	23 CACTCCTCCAGTGCTGTGCGCATGGCAGTGGGCTGCCTGC
1822 592	1763 TATGCTGTGCCTGCCTTGTGGGGGGCATCGGGGTGGACAGTGACACCGTGTGGAATGAGATG :::
1762 572	53 Pr
1702 552	1643 ACGCTAGATGAGATCCAGACAGTGCACTCTGAATACCACACCCTGCTCTATGGGACCAGT ::::::: ::: :::
1642 532	\GCAGGAGACAGGCCTGCTTAGCAAGTGCGAG
1582 512	1523 TGCATGTGCGGAACACACACGTGCACCCTGAGCATGCTGGCCGGATCCAGAGCATCTGG :::
1522 492	1466 GTCAAGCACCTCTTCACCACAAGTGTGGTCTACGACACGTTCATGCTAAAGCACCAG :::
1465 472	9 GGCATGAAGAACCCC
1438 452	CAAGCCCTGGGCCGTA ::: ArgProLeuSerArgA
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	95 GluAlaArgGlyProAlaProLeuGlnGlnHisProGlnValIleIleTrpGl
394 1372	alvalaspaspGlyLeuGluHisArgGluLeuGlyHisG! ATGCCCAACCCTGCAACCTTTGCAGGTGTACCAAGCGCC
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1273 378	1217 GATGGGGAGGAGGAGGAGGATTGCATCCAGGTTAAGGACGAGGAGGGCGAGAGTGGT
1216 371	1157 GAGGGCTCCACAGAGAGTGAGAGCACACAGGAAGAAGACCTGGAGGAGGAGGAGGAGGAAGAG ::::::
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1156	GTCTT
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1036	77 CAACAACAGCACCAGCAGTTCCTGGAGAAG

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Search completed: March 21, 2003, 13:57:15 Job time: 112.891 secs

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-YGAPOP=10 -YGAPEXT=0.5 -DELOP=6 -DELEXT=7
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Sequence 80, Appli
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Sequence 37, Applil
Sequence 5, Applil
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Alignment Scores Pred. No.: Score: Percent Similari Best Local Simil Query Match:	RESULT 1 US-09-446-504-80 US-09-446-504-80 Sequence 80, Application US/0 Patent No. 6218150 GENERAL INFORMATION: APPLICANT: UEMORI, Takashi APPLICANT: ENTO, Yoshimi APPLICANT: FUJITA, Tomoko APPLICANT: MUXAI, Hiroyuki APPLICANT: ASADA, Kiyozo APPLICANT: KATO, Ikunoshin TITLE OF INVENTION: DNA POLICATION UMBER: 1991-10 FILE REFERENCE: 1422-408 PCT CURRENT APPLICATION NUMBER: 1999-16 PRIOR APPLICATION NUMBER: JPRIOR FILING DATE: 1997-06-PRIOR FILING DATE: 1997-11-NUMBER: JPRIOR APPLICATION NUMBER: JPRIOR FILING DATE: 1997-11-NUMBER: JPRIOR FILING DATE: 1977-11-NUMBER: JPRIOR FILING DATE: 1997-11-NUMBER: JPRIOR FILING DATE: 1997-11-NUMBER: JPRIOR FILING DATE: 197-11-NUMBER: JPRIOR FILING DATE: JPRIOR FILING		1 A W A D	-000	101U1#		N) N) N) N)	0 0 0 0 5 0 4 0	20 21 22	9870	113
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                               GlyTyrGlyValGlyLeuAspLysGlyPheProAlaPheIleMetGlyTyrGluGluGly 306
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SOFTWARE: PatentIn Ver. :
SEQ ID NO 80
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Patent No. 6333158
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PRIOR FILING DATE: 1999-12-23
PRIOR APPLICATION NUMBER: PCT/JP98/02845
PRIOR FILING DATE: 1998-06-24
PRIOR FILING DATE: 1998-06-24
PRIOR APPLICATION NUMBER: JP 9-187496
PRIOR FILING DATE: 1997-06-26
PRIOR APPLICATION NUMBER: JP 9-320692
PRIOR APPLICATION NUMBER: JP 9-320692
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APPLICANT: ASADA, Kiyozo
APPLICANT: KATO, Ikunoshin
TITLE OF INVENTION: DNA POLYMERASE-RELATED
FILE REFERENCE: 1422-408PCT
CURRENT APPLICATION NUMBER: US/09/712,266
CURRENT FILLING DATE: 2000-11-15
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APPLICANT: SATO, Yoshimi
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ORGANISM: Pyrococcus furiosus
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MIYAKE, Kazue
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GluProArgTyrGluThrLeuLysLeuAlaGluGluValLysAspIleLeuSerProTrp 332
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGTTCTCACCTGATGTGGTCCTAGTCTCCGCCGGGTTTGATGCTGTTGAAGGACAT---
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: (616) 381-5465 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP: 49000
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.5 inches, 1.44 Mb storage
COMPUTER: IBM PC/XT/AT Compatible
COMPUTER: MS-DOS 5.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1547 CACCCTGAGCATGCTGGCCGGATCCAGAGCATCTGGTCCCGGCTGCAGGAGACAGGCCTG 1606
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ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER: FUTELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 20-JULY-1995
ATTORNEY/AGENT INFORMATION:
NAME: TETYPORCE F. Chapman
REGISTRATION NUMBER: 32549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: WordPerfect 5.0 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
                                          126 LysGlnGlnThrAspIleAlaValAsnTrpAlaGlyGlyLeu----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
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AAGGTGGCTGCAGGAGAGCTCAAGAATGGATTTGCCATCATCCGGCCCCCAGGACACCAC 1936
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                                                                                           HisSerAspAspTyrIleLysPheLeuArgSerIleArgProAspAsnMetSerGluTyr 87
                                                                                                                                                                                                                                                                                                                                                                                CACTCT---GAATACCACACCCTGCTCTATGGGACCAGTCCCCTCAACCGGCAGAAGCTA 1723
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                                                                                                                                          PheGluPheCysGlnLeuSerThrGlyGly---SerValAlaSerAlaValLysLeuAsn
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RESULT 3 US-08-528-255A-1

Sequence 1, Application US/08528255A Patent No. 5659016 GENERAL INFORMATION:

APPLICANT: NAKAMURA, YUSUKE APPLICANT: FURUKAWA, YOIL THE TITLE OF INVENTION: ENCODING TITLE OF INVENTION: ENCODING

FURUKAWA, YOICHI TION: RPDL PROTEIN ENCODING THE

AND SAME

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NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
ADDRESSEE: FLYNN, THIEL,

2026 Rambling Road

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LeuThrThrLeu-----

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AlaTyrGlySerLysIleAsnLeu----

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AlaLeuGlyAla---

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Patent No. 5763182
                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.5 inches,
COMPUTER: IBM PC/XT/AT Compatible
OPERATING SYSTEM: MS-DOS 5.0
SOFTWARE: WordPerfect 5.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                  APPLICANT: NAKAMURA, YUSUKE APPLICANT: : FURUKAWA, YOI
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FILING DATE: 2 CLASSIFICATION:
                             APPLICATION NUMBER:
                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGCTGCAGCCCTTGGATGAGGCAGTCTTGCAGCAAAAGCCC
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IleLeuGluLeuLysTyrHisGlnArgValLeuTyrIleAspIleAspIleHisHis
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   23-SEP-1996
N: 536

    LeuAspThrGluIleProAsnGluLeuPro 329

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                              US/08/717,365
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APPLICATION NUMBER: 0
FILING DATE: Septembe
APPLICATION NUMBER: J
FILING DATE: 22-SEPTE
APPLICATION NUMBER: J
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ORIGINAL SOURCE:
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US-09-502-945-2 (1-2885) x US-08-717-365-1 (1-482)
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IleLeuGluLeuLeuLysTyrHisGlnArgValLeuTyrIleAspIleAspIleHisHis 179
                                           CTCCTACAGCAGAAGTTGAACGTGGGCAAGGTCCTCATCGTGGACTGGGACATTCACCAT 2056
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                                                                                          AlaLysLysSerGluAlaSerGlyPheCysTyrValAsnAspIleValLeuAla-----
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US-09-282-305-8
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US-09-282-305-8
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SOFTWARE: PatentIn Vei
SEQ ID NO 8
LENGTH: 517
; TYPE: PRT
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Patent No. 6287843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION NUMBER: US/09/282,305
CURRENT FILING DATE: 1999-03-31
PRIOR APPLICATION NUMBER: 60/080,563
                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: 60/
PRIOR FILING DATE: 1998-04-03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: Maize Histone Deacetylases And Their Uses FILE REFERENCE: 5718-44,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Baldwin, Donald A. APPLICANT: Briggs, Steven P. APPLICANT: Crane, Virginia C.
                                                                     1421 TCCCCTGCTGCCCCTGGGGGCATGAAGAACCCCCCAGACCAACCCGTCAAGCACCTCTTC 1480
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1481 ACCACAAGTGTGGTCTACGACACGTTCATGCTAAAGCACCAGTGCATGTGCGGGAACACA 1540
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                              4 SerSerAlaGlySerGlyGlyAsnSerLeuProSerValGlyProAspGlyGlnLysArg
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CCCT	Thril	ACCG	CAGC:		CATC	MetG	gccc/	Asp-	GACC	AspI:	GAGG	Thrva	TACA:	IleA	TGGG	yalL	GCCA		cccc	A:	CTGG	Alava	GACA	ProVa	CCCA	Thre	AACC	AspLe	GAGA	AlaAı	CAGG	TyrTy	CACGTG	ArqVa
IGGATO	leArg	CATC	rgarg :: etarg	Asp	rgtct	luVal	ACGAG		cccc,	leGly:	TGGT	alser	CTCT	spile	CATT	::: ValLeuAla-	CACC		CAGGA	spile.	AGCTG	alLys	CGTG	:: alPhe	CAGC	ThrGlnGln	GCAG,	euCys	rccag,	rgTyr	AGACA	rGly	IG	alCvs'
GAGGC	AsnVa	rgtga	CAGCTGATGACCCTG ::: TyrMetArgSerPhe	ArgLe	CICI	PheAr	TTCTC	-	ATTGG	HisSe	GGAGG	ThrValSerPheHisLysPhe-	CTGCA	HisHi	CACCA		GCAAA	HisHi	CACCA	Alail	SCCTT	LeuAs	TGGAA	AspGl	CAGAA		AAGCT	ArgPh	ACAGT	GlyLe	GCCT	GlnGl		TvrPh
AGTCT :	1A1aA	TGCCT	e	uGlyc	GGGTG	gProG	ACCTG	-AspG	AGACG	rLysG	ACCAG	sLysP	ATCGCT	sGlyA	TGGCA	::: -IleL	ACTCC	SAlaI:	cccc	eAsnT	CAAGG	nHisG	TGAGA	yLeuI	GATGT	-AspG	AGACA	eHisA	GCACT	yLeuLeuAs	GCTTA	 YHisp	-cacc	 eTyrAsp
CCCTTGGATGAGGCAGTCTTGCAGCAA	rgCys	CTGAA	GGGGG	ysPhe	GCTAC	lyAla	ATGTO	luSer	TGGAG	lyLys	GCGTG	he	ATGAC	spGly	ATGGC	euGI:::	TACAC	ysLys	AGGA	rpSer	TGGCT		TGCAC	uTyrSer	ATGCT	lnIle	GCAAG	laAsp	CT	snGln	GCAAG	roMet	CTGAC	- II
CAA	eArgAsnValAlaArgCysTrpCys	ACCGCCATCTGTGATGCCTCTGAAGCTTGTGTCTCGGCTCTGCTCAGTGTAAAGCTGCAG	CAGCTGATGACCCTGGCAGGGGGCCGGGGGGGGGGCCTGGCCCTGGAGGGAG	AspArgLeuGlyCysPheAsnLeuSerIleLysGlyHisAlaGluCysValArg	ATCTGTCTCCTCTGGGTGGCTACTCTGTCACCGCCAGATGTTTTGGCCACTTGACCAGG	MetGluValPheArgProGlyAlaValValLeuGlnCysGlyAlaAspS	GCCCACGAGTTCTCACCTGATGTGGTCCTAGTCTCCGCCGGGTTTGATGCTGTTGAAGGA	AspGluSerTyrGlnSerLeuPheLysProIleMetGlyLysVal	GACCCCCCCATTGGAGACGTGGAGTACCTTACAGCCTTCAGGACAGTGGTGATGCCCATT	yHisSerLysGlyLysTyrTyrS	AGGTTGGTGGAGGACCAGGCGTGGGGTACAATGTGAACGTGGCATGGACAGGAGGTGTG	-	TACATCTCTCTGCATCGCTATGACAACGGGAACTTCTTTCCAGGCTCTGGGGCTCCTGAA	IleAspIleHisHisGlyAspGlyValGluAlaPheTyrThrThrAspArgVa	TGGGACATTCACCATGGCAATGGCACCCAGCAGGCGTTCTACAATGACCCCCTCTGTGCTC	-:: ::: -IleLeuGluLeuLeuLysHisHisGluArgValLeuTyrValAs	GCCATCACCGCAAAACTCCTACAGCAGAAGTTGAACGTGGGCAAGGTCCTCATCGTGGAC	:::::: ::: ::: :: ::: :	CCCCCAGGACACCACGCCGAGGAATCCACAGCCATGGGATTCTGCTTCTTCAACTCTGTA	AspIleAlaIleAsnTrpSerGlyGlyLeu-	CTGGAGCTGGCCTTCAAGGTGGCTGCAGGAGAGCTCAAGAATGGATTTGCCATCATCCGG	-	GACACCGTGTGGAATGAGATGCACTCCTCCAGTGCTGTGCGCATGGCAGTGGGCTGCCTG	ProValPheAspGlyLeuTyrSerPheCysGlnThrTyrAlaGlyAlaSerValGlyGly	CCCATCAGCCAGAAGATGTATGCTGTGCTGCCTTGT-	AspGlnIleArgLeuLeuLysArgPheAsnValGlyGluAspCys	AACCGGCAGAAGCTAGACAGCAAGAAGTTGCTCGGT-	AspLeuCysArgPheHisAlaAspAspTyrIleAsnPheLeuArgSerValThrProGlu	GAGATCCAGACAGTGCACTCTGAATACCACACCCTGCTCTATGGGACCAGTCCCCTC	AlaArgTyrGlyLeuLeuAsnGlnMetGlnValTyrArgProAsnProAlaArgAspArg	CAGGAGACAGGCCTGCTTAGCAAGTGCGAGGCGGATCCGAAGGTCGCAAAGCCACGCTAGAT	TyrTyrGlyGlnGlyHisProMetLysProHisArgIleArgMetThrHisSerLeuLeu	CATIGO	::
	'sTyre	FGTC	CGGGTGGTGCTGGCCCTGGAGGGAAGCCATGACTTG AsnValProLeuLeuLeuLeuGlyGlyGlyGlyTyr	uSer	CACCO	1LeuC	AGTC	nSerI	TACAC	yrSerI	CAATO	-GlyAspTyrPheProGlyThrGlyAspIleAr	GAACT	uGlu	GCAGO	euLysi	\GTTG!	uAlas	'AGCC!	yLeu.	AGAGO		CAGTO	/sGln]	GCCTI	uLeuI	GCTC	rile	CCAC	nVal	.GCGG1	OHisi	TGGC	
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	rG1yv	CTGC	CTGG	sGlyH	ATGTT	sGlyA	cecer	eLysP	CAGGA	nValp	CGTGG	eProG	rccag	eTyrT	CTACA	sGluA	3GGCA	yPheC	ATTCT		GAATG		3CGCA	rAlaG	-GGGG	yPheA		eLeuA	3CTCT	gProA	AGGTC	eArgM	CAGA	
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Patent No. 6287843
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SEQ ID NO 2
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APPLICANT: Briggs, Steven P.
APPLICANT: Crane, Virginia C.
TITLE OF INVENTION: Maize Histone Deacetylases
FILE REFERENCE: 5718-44,
CURRENT APPLICATION NUMBER: US/09/282,305
CURRENT FILING DATE: 1999-03-31
CURRENT FILING DATE: 1999-03-31
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PRIOR FILING DATE: 1998-04-03
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                             ValGlyGluAsp-----CysProValPhe---
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                                                                                                                               SOFTWARE: P. SEQ ID NO 13
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                                                                                                                                                                                                                 PRIOR APPLICATION NUMBER: US 60/155,493
PRIOR ETLING DATE: 1999-09-23
PRIOR EPLICATION NUMBER: US 09/404,133
PRIOR FILING DATE: 1999-09-23
PRIOR APPLICATION NUMBER: PCT/US99/2081
PRIOR FILING DATE: 1999-09-23
PRIOR APPLICATION NUMBER: US 60/101,594
                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: ALZHEIMER'S DISEASE SECRETASE, TITLE OF INVENTION: THEREOF
                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION NUMBER: US/09/548,372D CURRENT FILING DATE: 2000-04-12
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                                                                                                                                                                           NUMBER OF SEQ ID NOS:
                                                                                                                                                                                               PRIOR FILING DATE: 1998-09-24
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CURRENT FILING DATE: 2000-04-12
PRIOR APPLICATION NUMBER: US 60/155,493
PRIOR FILING DATE: 1999-09-23
PRIOR APPLICATION NUMBER: US 09/404,133
PRIOR FILING DATE: 1999-09-23
PRIOR APPLICATION NUMBER: PCT/US99/20881
PRIOR APPLICATION NUMBER: DCT/US99/20881
PRIOR APPLICATION NUMBER: US 60/101,594
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APPLICANT: GURNEY ET AL
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APPLICANT: Baldwin, Donald A.
APPLICANT: Briggs, Steven P.
APPLICANT: CRISCO, Virginia C.
TITLE OF INVENTION: Maize Histone Deacetylases And
FILE REFERENCE: 5718-44,
CURRENT APPLICATION NUMBER: US/09/282,305
CURRENT FILING DATE: 1999-03-31
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PRIOR APPLICATION NUMBER: 60/080,563
PRIOR FILING DATE: 1998-04-03
NUMBER OF SEQ ID NOS: 18
SOFTWARE: Patentin Ver. 2.0
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LENGTH: 439
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Best Local Similarity:
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US-09-282-305-6
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                   2051 CACCATGGCAATGGCACCCAGCAGGCGTTCTACAATGACCCCTCTGTGCTCTACATCTCT 2110
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HisHisGlyAspGlyValGluGluAlaPheTyrThrThrAspArgValMetThrValSer
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US-09-282-305-4
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Patent No. 6287843
GENERAL INFORMATION:
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SOFTWARE: PatentIn Ve
SEQ ID NO 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Baldwin, Donald A.
APPLICANT: Briggs, Steven P.
APPLICANT: Crane, Virginia C.
TITLE OF INVENTION: Malze Histone Deacetylases And Their Uses
FILE REFERENCE: 5718-44,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION NUMBER: US/09/282,305
CURRENT FILING DATE: 1999-03-31
PRIOR APPLICATION NUMBER: 60/080,563
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                                                                                                                                                                                                                                                                                                                                                                                    TYPE: PRT
ORGANISM: Zea mays
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Patent No. 6
                                                                                                                                                                                                                                                                                                                       APPLICANT: HOFFMAN,
APPLICANT: KAY, Brian K.
APPLICANT: KAY, Brian K.
APPLICANT: KOULKES, Dana M.
APPLICANT: FOWLKES, Dana M.
APPLICANT: MCCONNELL, Stephen J.
APPLICANT: MCCONNELL, Stephen J.
TITLE OF INVENTION: DOMAIN OF INTEREST AND METHODS OF IDENTIFYING AND
TITLE OF INVENTION: USING SAME
TITLE OF INVENTION: USING SAME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                    CLASSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
NAME: Misrock, S. Leslie
                                                                                               SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION UNMBER: US/08/630,915A FILING DATE: 03-APR-1996
                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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STATE: New York
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                      REGISTRATION NUMBER:
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REFERENCE/DOCKET NUMBER:
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TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 37:
SEQUENCE CHARACTERISTICS:
LENGTH: 1400 amino acids
TYPE: amino acid
STRANEDNESS: single
1439 CCCCAGGGGCAGGAGGATTGGGTACGGCCCAGGGCTTGGTGGGGCACAGTGGCCA 1380
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TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-8864/9741
                                                                                                                                                   1559 CATGCTCAGGGTGCACGTGTGTTCCCCGCACATGCACTGGTGCTTTAGCATGAACGTGT 1500
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                                                                                 ThrCysCysThrThrGlyGlyAlaGly-----------AlaGlyCysCys 718
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                                                                                                                  ---CysAlaThrCysAlaCysCysGlyThrCysCysThrGly-------
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Qy 480	Db 1087	Qy 537	Qy 597 Db 1077	Qy 657 Db 1062	Qy 717 Db 1047	Qy 771 Db 1028	μ.	Db 988	Qу 834	Qy 893 Db 968	Db 948	Db 929	Оу 998	-	لبز	Qy 1094 Db 889	Db 869	Qу 1139	Db 849	ОУ 1199	Db 829	۔	Qy 1319 Db 815	Db 801	Qy 1379	Db 782
TGAGGGAGCATCTCAGTGGGGATGTTGGGGACTGAGCCAGTAAAGCCATTCTCAGCGATG 421	aAlaGlyCysAlaCysGlyThrGlyGlyGlyAlaAlaAlaAlaAlaGlyCysGlyCysCy 1107		AGGTGTGAGTTGGTGACAGTGACCGTGGCCTGCAGCCCTAGGGAGATGTTGGGCAGAGAA 538		AGGCAGCCAGGAATAGAGGATGTGCTCATGAACTTGCCGGTCAGCGTGCCACCCTGCCGC 658	AGCAGGGAGGCATGCCCGTGGGGGCTCCCGTCGCCCTCCAGTGCCACGCCCAGC 718 :::	::: 	CysalaThrAlaCysAlaCysGySGlyCysGysAlaCysCysGlyGlyCysCysCysCys 1007		TGCCTACCGTCCGCATGCTG-GTGGCCACACGTTCACCCGTCACTAGTGGGGACTGCCCG 835 	ysCysGlyGlyThrCysGly-ThrThrCysGlyGlyGlyAlaGlyAlaAlaGlyAla				GGATCTTGCCCAGCTGTAGC	. CTGTCTCCTCAGGGTGGGTGGTGGGCTGCCTGGGCAGCTCCCCTGTCTTGGTGA 1041 ::			<pre>::: ysalaGlyGlyGlyCysCysCysAlaThrAlaAlaGlyGlyAlaAlaGlyThrCysThrA</pre>			#\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!	TTTTGTATCCAGCACCAGGCTCCTCCAAGTCGGGCCCCTCCTCAGCACCACTCTCGCCCT 1260	rThr-CysalaalaglyGlyThrCysalaGlyAlaAlaGly814		-AlaThrGlyThrGlyGlyThrGlyGlyThrThrThrGlyGlyAlaGlyAlaAlaGlyTh 801

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                                                                                                                                                                                                                                                         Percent Similarity:
Best Local Similarity:
Query Match:
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TYPE: PRT
; ORGANIZM: Caenorhabditis elegans
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Jorgensen, Erik
TITLE OF INVENTION: Nematode Neuromuscular Junction GABA Receptors
TITLE OF INVENTION: Methods Related Thereto
FILE REFERENCE: 21101.000903
CURRENT APPLICATION NUMBER: US/09/627,650B
CURRENT FILING DATE: 2000-07-28
PRIOR APPLICATION NUMBER: 09/436,063
PRIOR APPLICATION NUMBER: 09/436,063
PRIOR FILING DATE: 1999-11-08
PRIOR APPLICATION NUMBER: 60/107,727
PRIOR FILING DATE: 1998-11-09
PRIOR FILING DATE: 1998-11-09
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                                                                      ThrThrThrGlyAlaThrGlyAlaCysCysAlaThrGlyAlaCysThrAlaAlaThrAla 1187
                                                                                                                                                                                   GCATCTCATTCCACACGGTGTCACTGTCCA-------
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                                                                                                                                                                                                                                                                                                                                CCTCGGCGTGGTGTCCTGGGGGCCGGATGATGGCAAATCCATTCTTGAGCTCTCCTGCAG
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                                                                                                              -CCCCGATGCCCCCACAAGGCAGCACAGCATACATCTTCT 1755
                                                                                                                                                                                                                                                                                                                                                                      -----AlaThrGlyCysGly-A 1118
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CATCCAAGGGC-----TGCAGCTTTACACTGAGCAGAGCCGAGACACAAGCTT 2484 GlyAlaGlyThrCysThrThrAlaThrGlyAlaGlyThrThrGlyCysCysGly--CysA AGCCACCCAGAGGAGACAGATGTCCTTCAACAGCATCAAACCCGGGGGAGACTAGGACCA 2304 CCCCTGCCAGGGTCATCAGCTGCCTGGTCAAGTGGCCAAAACATCTGGCGGTGACAGAGT 2364 laAlaAlaGlyCysThrThrAlaGlyThrThrCysAlaGlyGlyAlaGlyAlaAlaThrA 993 ${\tt laAlaGlyGlyThrCysGlyThrCysAlaAlaThrCysAlaThrAlaCysGlyCysAlaCysGlyCysAlaCysGlyCysAlaAlaCysGlyCysAlaAlaCysGlyCysAlaAlaCysGlyCysGlyCysAlaCysGlyCysGlyCysAlaCysGlyCysGlyCysAl$ laGlyThrThrThrGlyThrAlaCysThrThrCysAlaGlyThrCysThrAlaThrCysA 953 CGATGACTTTCTCTAGCGTGGCCACTGCGTTGATGTTGGGCCTTTTTGCTGCAAGACTGCCT 2532 ------GGCCCAGACCAGCGGCGAACTTCTGCACACACCTCCAGTGTTTGCTCTGGATCT 2592 laThrThrCysCysGlyCys----- 1000 -----AlaGlyThrCysCysGlyThrGlyThrCysCysAlaCysCys 913 ----CysThrThrGlyCysThrGlyGlyThrThrCysThrT 1014 973

796 1519	0 TGCCCGTGGAGTGGCACAGCAATGAGGGTGCTCTGCTGCCGGGCC	150	₽ ₹
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1486	ANGECTIONS AND THE	146	₩ ₹
1467	8 AlaCysGlyThrCysCysAlaAlaCysCysThrGlyThrAlaCysCalaThrThrCysCys O ACCCCTTCACACACTTCACCACTTCACCACTTCACACTTCACCAC		₹ ₹
961	8TGCATGACCAGCTGCTGC	97	ΣÝ
1447	${\tt 8} \verb ThrThrThrAlaCysThrCysGlyThrCysCysAlaCysCysGlyAlaThrCysAlaAla }$	142	ĕ
979	9	97	¥
1427	CysAlaCysCysAlaCysGlyThrAlaCysCysGlyCysCysGlyThr	140	ŏ
979	TGCTGCTTCTGCTTCTCCAGGAACTGCTGGTGCTGTTTGT	1017	¥
1407	rThrCysAlaAla	139	ŏ
1018	GTCTTGGTGAGGATCTTGCCCAGCTGTAGCTGC	1050	₹
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1051	TCCGTCAGCTCCTCTCTCTCTCCTCAGGGTGGGTGGGGTGGGCTGGCCTGGGCAGCTCCCCT	1110	¥
1374	7 ThrCysThrThrGlyAlaGlyThrCysThrCysThrThrCysCysThrCysCys	135	გ ⊹
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1171	0 TCCTCCTCCCATCCTCTTCCTCCTCCTCCTCCAGGTCTTCCTGTGTGTG	N	₹
1336	GlyAlaGlyCysCysAlaGlyAlaAlaAlaAlaGlyAlaAlaThrCysThrCysGlyAla	1317	퓻
1231	0 TCGGGCCCCTCCTCAGCACCACTCTCGCCCTCCTCGTCCTTAACCTGGATGCAATCCTCC	129	₹
1316	7 CysAlaAlaAlaCysGlyGlyAlaThrGlyAlaAlaGlyCysThrThrGlyThrCysCys	129	ŏ
1291	TGGGCATCTGAGAACAGTTTTTTGTATCCAGCACCAGGCTCCTCCAAG	1338	¥
1296	8 ysCysGlyCysCysGlyThrCys-GlyGlyAlaThrAlaCysAlaThrCysAlaGly	127	ŏ
1339	ACACCTGCAAAGGTTGCAGCGGT	139	Ϋ́
1278	4AlaCysThrThrCysThrAlaGlyAlaAlaThrAlaCysGlyC	126	ϵ
1399	8 TCTGGGGGGTTCTTCATGCCCCCAGGGGCAGCAGCAGGGGATTGGGTACGGCCCAGGGCT	145	¥
1263	2 yGlyThrAlaThrThrCys-ThrGlyThrThrCys	125	ŏ
1459	8 TGCTTTAGCATGAACGTGTCGTAGACCACACTTGTGGTGAAGAGGTGCTTGACGGGTTGG	151	¥
1252	ThrAlaGlyGlyThrGlyThrCysThrGlyCysThr-ThrCysAlaThrGlyAlaThrGl	1233	ŏ
1519	4 TCTGGATCCGGCCAGCATGCTCAGGGTGCACGTGTGTTTCCCCGCACATGCACTGG	157	¥
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1575	4 GACCTCGGATCCGCTCGCACTTGCTAAGCAGGCCTGTCTCCTGCAGCCGGGACCAGATGC	163	¥
1217	ThràlaThrGlyThrGlyAlaAlaAla	1208	ϵ
1635	CACTGTCTGGATCTCATCTAGCGTGGCTTTGC	169	¥

2646	8.8.A	26	
999	92 CysGlyAlaGlyAlaAlaGlyAla	Db 8	
2685	744 GCCGCAGCTTGGGCCTGTTCGGCCCCCCACCAACAGCAAGGCCATGGCGTTCACATTTCGG	Qy 27	
2745 891	95 GGCTCCTGCTCCATGGGCTCCTCTGCCGGCCTGGGGCTGTGTTCCCGGGCT	Qy 279 Db 87	
	502-945-2 (1-2885) x US-09-436-063C-5 (1-1917)	us-09-5	
	Alignment Scores: 7.33e-10 Length: 1917 Score: 262.50 Matches: 198 Percent Similarity: 29.43% Conservative: 76 Best Local Similarity: 21.27% Mismatches: 353 Query Match: 4.87% Indels: 305 DB: Gaps: 38	Alignment Pred. No.: Score: Percent Si Best Local Query Matc DB:	
	PRIOR APPLICATION NUMBER: 60/107727 PRIOR PELICATION NUMBER: 60/107727 PRIOR FILING DATE: 1998-11-09 NUMBER OF SEQ ID NOS: 18 SOFTWARE: Patentin Ver. 2.1 SEQ ID NO 5 LENGTH: 1917 TYPE: PRT ORGANISM: Caenorhabditis elegans US-09-436-063C-5	PRIO PRIO PRIO NUMB SOFT SEQ I LEN TYP ORG	
and	063C-5 10.6407210 10.6407210 10.6407210 10.FORMATION: INFORMATION: NT: Bamber, Bruce NT: Jorgensen, Erik p: INVENTION: Mematode Neuromuscular Junction GABA Receptors p: INVENTION: Methods Related Thereto P: PERENCE: p-1095corrected APPLICATION NUMBER: US/09/436,063C	US-09-436-C Sequence Patent NC GENERAL I APPLICAN APPLICAN TITLE OF TITLE OF FILE REE FILE REE CHERENT	
	SCysGlyAlaCys 1	Db 16	
1621	.616 rGlyThrcy		
418	77 GGGAGCATCTCAGTGGGGAATGTTGGGGACTGAGCCAGTAAAGCCATTCTCAGCGATGGTG	Oy 47	
478 1616	537 GGAGACGTGTAGAGGCTGAACTGGTTGGGGGAGCTGTCCAGAGGGAGG	Qy 537 Db 1597	
538 1597	597 AGGTGTGAGTTGGTGACAGTGACCGTGGCCTGCAGCCCTAGGGAGATGTTGGGCAGAGAAA	Qу 5 Db 15	:
1589	72 aGlyAlaCysGlyGlyCysThrGlyThrAlaAlaThrAlaThrCysCysGly	Db 1572	
598	647GGGCCTGCCTCTCGGCCTCCTGCTGTTCGACAGCTTCGGGGAGGCAGTG	Qy 6	
648 1572	675 AGCGTGCCACCCTGCCGCAGGGACTGGA	Qy 6 Db 15	
676 1552	735 TCCAGTGCCACGCCCAGCAGCAGCAGGAATAGAGGATGTGCTCATGAACTTGCCGGTC ::: ::: :: ::: ::: ::: ::: ::: ::: :	Qy 7 Db 15	
1539			
736	795 TGCTCCAGCAACAGCACATGCTGCAGCAGGGAGGCATGCCCGTGGGGGGCTCCCGTCGCCC	Ωу 7	

	QY 1754 GGCTGATGGGACCGAGCAACTTCTTGCTGTCTAGCTTCTGCCGGTTGAGGGGACTGGTCC 1695
	Db 1168 ThrThrGlyAlaThrGlyAlaCysCysAlaThrGlyAlaCysThrAlaAlaThrAla 1187
	QY 1793 1755
	Db 1148 AlacysThrGlyThrGlyCysThrCysAlaCysAlaAlaThrGlyAlaCysThrAlaCys 1167
	QY 1823 GCATCTCATTCCACACGGTGTCACTGTCCA1794
	QY 1883 CCACCTTGAAGGCCAGCTCCAGCAGGCAGCCCACTGCGACAGCACTGGAGGAGT 1824
	Db 1118 laCysAlaCysCysGlyGlyCysAlaAlaGlyAlaGlyThrThrGlyC 1134
	Qy 1943 CCTCGGCGTGCTGCTGCGGGGCCGGATGATGCCAAATCCATTCTTGAGCTCTCCTGCAG 1884
	Qy 2003 GTAGGAGTTTTGCGGTGATGGCTACAGAGTTGAAGAAGCAGAATCCCATGGCTGTGGATT 1944
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	QY 2057CATGGTGAATGTCCCAGTCCACGATGAGGACCTTGCCCACGTTCAACTTCTGCT 2004
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	Qy 2102AGAGCACAGAGGGGTCATTGTAGAACGCCTGCTGGGTGCCATTGC 2058
	1060AlaCysCysAlaThrCysThrGlyThrCys
	QY 2162 CTTCAGGAGCCCCAGAGCCTGGAAAGAAGTTCCCCGTTGTCATAGCGATGCAGAGAGATGT 2103
	ysCysAlaAlaThrAlaThrAlaThr-CysThr
	2217 Oracidado a composição de composi
	1029AlaCysAlaThrCysGlyCysThrThrCysThrAlaCysAlaThrCysAlaThrC
	Qy 2246 ACTCCACGTCTCCAATGGGGGGGTCCACA 2218
	Qy 2303 CATCAGGTGAGAACTCGTGGGCAATGGGCATCACCACTGTCCTGAAGGCTGTAAGGT 2247
	Db 1001CysThrThrGlyCysThrGlyGlyThrThrCysThrT 1014
	Qy 2363 AGCCACCCAGAGGAGACAGATGTCCTTCAACAGCATCAAACCCCGGCGGAGACTAGGACCA 2304
	Db 993 laThrThrCysCysCysGlyCys 1000
	Qy 2423 CCCCTGCCAGGGTCATCAGCTGCCTGGTCAAGTGGCCAAAACATCTGGCGGTGACAGAGT 2364
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	Qy 2483 CAGAGGCATCACAGATGGCGGTCAAGTCATGGCCTCCCTC
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	QY 2531 CATCCAAGGGCTGCAGCTTTACACTGAGCAGAGACACAGAGCTT 2484
	Qy 2591 CGATGACTTTCTCTAGCGTGGCCACTGCGTTGATGTTTGGCTGCAAGACTGCCT 2532 :: :: : Db 933 laGlyThrThrGlyThrAlaCysThrThrCysAlaGlyThrCysThrAlaThrCysA 953
· · · · · ·	Db 914 GlyAlaGlyThrCysThrThrAlaThrGlyAlaGlyThrThrGlyCysCysGlyCysA 933
	Qy 2645GGCCAGACCAGCGGCGAACTTCTGCACACAGCTCCAGTGTTTGCTCTGGATCT 2592
	Db 900AlaGlyThrCysCysGlyThrGlyThrCysCysAlaCysCys 913
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1519	1506 CysalaGlyThrGlyCysCysGlyAlaAlaThrGlyAlaAla	рь	
796	CACAGCAATGAGGGTGCTCTGCTGC	Qy	
1505	::: AlaThrThrThrCysThrCysAlaAlaAlaThrGlyAlaGlyGlyAlaThrGly	Db	
841	900 GGGAGCTTGCCTACCGTCCGCATGCTGGTGGCCACACGTTCACCCGTCACTAGTGGGGAC	O _V	
901 1486	960 AGGGCCTGGGGACTCTGCGGCAGCGGTGAGGACTGAGTGCGGCTCAGGGGCCCGATGCCGC 9	p Qy	
1467	1448 AlaCysGlyThrCysCysAlaAlaCysCysThrGlyThrAlaCysAlaThrThrCysCys	Db	
961		Qy	
1447	1428 ThrThrThrAlaCysThrCysGlyThrCysCysAlaCysCysGlyAlaThrCysAlaAla	Db	
979	979	Qy	
1427	alacyscysAlacysGlyThrAlacysCysGlyCysCysGlyThr	DЬ	
979		Qy	
1407	1394CysCysCysThrCysGlyThrAlaThrThrThrCysAlaAla	Db	
1018		Qy	
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1356	1337 AlaThrGlyCysThrGlyAlaCysCysCysCysThrThrThrAlaCysCysAlaCysAla	рь	
1171		Qy	
1336		Db	
1231		Qy	
1316		Db	
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1278		Db	
1399		Qy	
1263	1252 yGlyThrAlaThrThrCys-ThrGlyThrThrCys	DЪ	
1459		Qy	
1252	1233 ThrAlaGlyThrGlyThrCysThrGlyCysThr-ThrCysAlaThrGlyAlaThrGl	Db	
1519		Qy	
1232	1218GlyThrAlaThrCysGlyAlaThrAlaThrAlaThrThrCys	DЬ	
1575		Qy	
1217	1208 ThralaThrGlyThrGlyAlaAlaAlaAla	₽b	
1635	GTCTGGATCTCATCTAGCGTGGCTTTGC	Qy	
1207	$1188\ { t GlyThrThrCysAlaAlaThrGlyCysCysAlaAlaAlaAlaGlyThrGlyThrCysAla}$	DЬ	

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; ORGANISM: Zea mays
US-09-282-305-10
                                                                                                                                                                                                                                                            Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 10, Application US/09282305 Patent No. 6287843 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: I
SEQ ID NO 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Baldwin, Donald A.
APPLICANT: Briggs, Steven P.
APPLICANT: Crane, Virginia C.
TITLE OF INVENTION: Malze Histone Deacetylases
FILE REFERENCE: 5718-44,
                                                                                                                                                                                                                                                                                                                                                                                                            CURRENT APPLICATION NUMBER: US/09/282,305
CURRENT FILING DATE: 1999-03-31
PRIOR APPLICATION NUMBER: 60/080,563
PRIOR FILING DATE: 1998-04-03
                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                              LENGTH: 432
                                                                                 1478 TTCACCACAAGTGTGGTCTACGACACGTTCATGCTAAAGCACCAGTGCCATGTGCGGGAAC 1537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1590
                               1538 ACACACGTGCACCCTGAGCAT------GCTGGCCGGATCCAGAGCATCTGGTCCCGG 1588
                                                                                                                                                                                                                                                No.:
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1552 aGlyCysalaThrCysCysGlyThralaThrThrCysThrGlyThralaThrCysAl 1572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1540 GlyAlaGlyThr-AlaAla-------CysThrCysAlaCysAlaAl 1552
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ValTyrPheGlyProAsnHisProMetLysProHisArgLeuCysMetThrHisHisLeu 39
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                                                                 PheIleThrProIleValGlyAspVal---
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                                                                                                                                                                                                                                                                                                                                                                            PatentIn Ver.
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260.00
41.36%
25.21%
4.86%
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                                                                                                                                                                             Length:
Matches:
Conservative:
Mismatches:
Indels:
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nd	RESULT 15 US-09-637-650B-9 ; Sequence 9, Application US/09627650B ; Patent No. 6406872 ; Patent No. 16406872 ; Patent INFORMATION: APPLICANT: Bamber, Bruce ; APPLICANT: Jorgensen, Erik ; TITLE OF INVENTION: Nematode Neuromuscular Junction GABA Receptors a	
	Qy 2372 ACCGCCAGATGTTTTGGCCACTTGACCAGGCAGCTGATG 2410 :: ::	
306	Db 287 ValLysLysPheAsnIleProLeuLeuValThrGlyGlyGlyGlyTyrThrLysGluAsn	
2371	QY 2351CCTCTGGGTGGCTACTCTGTC	
286	267 ArgAspArgLeuGlyCysPheAsnLeuSerIleGluGlyHisAlaGluCysValLysP	
2350	Qy 2330	
2329 266	QY 2279 ATTGCCCACGAGTTCTCACCTGATGTGGTCCTAGTCTCCGCCGGGTTTGAT :::	
246	Db 231 IleAspAspThrSerPheThrArgProPheLysThrIleIleAlaLys	
2278	QY 2219 GTGGACCCCCCATTGGAGACGTGGAGTACCTTACAGGCTTCAGGACAGTGGTGATGCCC	
230	:::::::	
2218	Н	
2158 210	QY 2099 CTCTACATCTCTCTGCATCGCTATGACAACGGGAACTTCTTTCCAGGCTCTGGGGCTCCT ::: :: ::: :::	
91	172 AspIleAspValHisHisGlyAspGlyValGluGluAlaPheTyrPheThrAspArgVal	
2098	QY 2039 GACTGGGACATTCACCATGGCAATGGCACCCAGCAGGCGTTCTACAATGACCCCTCTGTG	
171	Db 154 LeuValLeuGlyIleLeuGluLeuLysTyrHisAlaArgValLeuTyrIle	
2038	QY 1979 GTAGCCATCACCGCAAAACTCCTACAGCAGAAGTTGAACGTGGGCAAGGTCCTCATCGTG	
153	Db 138HisHisAlaLysLysCysGluAlaSerGlyPheCysTyrIleAsnAsp	
1978	TCT	
137	Db 126 IleCysAspIleAlaIleAsnTrpAlaGlyGlyLeu	
1918	QY 1859 CTGCTGGAGCTGGCCTTCAAGGTGGCTGCAGGAGAGCTCAAGAATGGATTTGCCATCATC	
125	Db 115ThrLeuAspAlaAlaArgArgLeuAsnHisLys	
1858	TGC	
114	DASnLeuPheGluPheCysGlnIleTyrAlaGlyGly	
1798	TCGGGGTGGAC	
98	Db 80AspSerGlnHisLeuTyrAlaSerGluLeuThrArgTyrAsnLeuGlyGluAspCys	
1744	CTCGGT	
79	Db 60 IleGluLeuAlaGlnPheHisSerAlaAspTyrValGluPheLeuHisArgIleThrPro	
1705	S	
59	40	
1648	TA	

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FILE REFERENCE: 21101.0009U3
CURRENT APPLICATION NUMBER: US/09/627,650B
CURRENT FILING DATE: 2000-07-28
PRIOR APPLICATION NUMBER: 09/436,063
PRIOR FILING DATE: 1999-11-08
PRIOR APPLICATION NUMBER: 60/107,727
PRIOR FILING DATE: 1998-11-09
NUMBER OF SEQ ID NOS: 50
SOFTWARE: PATENTIN Ver. 2.1
SEQ ID NO 9
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; ORGANISM: Caenorhabditis elegans
US-09-627-650B-9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2816 GGGCCGGGCGTCACAGGGCAGGCTCCTGCTCCATGGGCTCCTCTGCCGGCCTGGGGCCTG 2757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        947 GlyGlyThrAlaThrCysAlaThrThrThrThrGlyGlyThrThrGlyAlaAlaThr 966
                                                                         lyThrAlaAlaThrGlyGlyThr-------AlaThrThrCysGlyCysCysT 1120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CysGlyAlaGlyAlaAlaGlyCysThrThrCysGlyCysCysGlyGlyCysThrCysGly 986
                                       CGCCTGGTCCTCCACCAACCTCTTCAGGAGCCCCAGAGCCTGGAAAGAAGTTCCCGTTGT 2124
                                                                                                                     CCACGTCTCCAATGGGGGGGTCCACACCTCCTGTCCATGCCACGTTCACATTGTACCCCA 2184
                                                                                                                                                                                                   CATCAGGTGAGAACTCGTGGGCAATGGGCATCACCACTGTCCTGAAGGCTGTAAGGTACT 2244
                                                                                                                                                                                                                                                                               AGCCACCCAGAGGAGACAGATGTCCTTCAACAGCATCAAACCCGGCGGAGACTAGGACCA 2304
                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGCCCCTCGCAGGGACCGGCCCAGACCAGCGGCGAACTTCTGCACACAGCTCCAGTGTT 2604
hrCysGlyThrThrGlyCysThrCysGlyAla-----Gly-ThrAlaCysGlyCys 1136
                                                                                                                                                          ------GlyGlyGlyThrCysThrGlyGlyAlaThrGlyThrGlyThrThrThrCysT 1091
                                                                                                                                                                                                                                                                                                                      ysThrThrAlaThrGlyThrCysAlaAla------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ysThrGlyAlaThr------CysAlaCysThrAlaCysAlaAlaCysCysAlaAlaT 1044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAAGACTGCCTCATCCAAGGGCTGCAGCTTTACACTGAGCAGAGCCGAGACACAAGCTT 2484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCTCTGGATCTCGATGACTTTCTCTAGCGTGGCCACTGCGTTGATGTTGGGCTTTTGCT 2544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCCCCACCAACAGCAAGGCCATGGCGTTCACATTTCGGCTTCTTCGGTCTCACCTGCTT 2664
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                                                                                                                                                                                                                                                                                                                                                           CCCCTGCCAGGGTCATCAGCTGCCTGGTCAAGTGGCCAAAACATCTGGCGGTGACAGAGT 2364
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----ThrCysAlaCysAlaAlaThrGlyAlaCysAlaAlaCysThrC 1027
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CTGCCTGGGC 1060	TGC TGCTCCGTCAGCTCCTCCTCTCTCTCAGGGTGGGTGGTGGGC	1116	ΟV
lyGlyCysGly 1435	AlaGlyAlaCysGl	1428	Db
CAAGACCTCC 1117	TCACTCTGTGGAGCCCTCCCGGGGCATGGTCAGGGCTCCCTCC	1176	Qy
:: aCys 1427	AlaCysAlaThrCysCysAlaCysGlyThrCysThrThrGlyThrCysAl	1410	Db
CCTGTGTGCTC 1177	CCTCCTCCTCCCCCATCCTCTTCCTCGTCCTCCTCCTCCAGGTCTTC	1236	Qy
ThrGlyCysAla 1409		1406	Db
CTGGATGCAA 1237	TCCAAGTCGGGCCCCTCCTCAGCACCACTCTCGCCCTCCTCGTCCTTAACCTGGATGC	1296	Qy
laThrGlyAla 1405	ThrGlyCysCysGlyGlyAlaCysGlyAlaThrThrCysCysAlaAlaThrGlyAla	1387	Db
CACCAGGCTCC 1297	TTGCAGCGGTTGGGC	1356	Qy
nrGlyAlaThr 1386		1367	Db
CTTGGTACACC 1357	CCAGGGCTTGGTGGGGCACAGTGGCCAGGC	1416	Qy
aThrGlyGlyA 1367	ysThrAlaThrGlyAlaAlaThrCysCysAlaThrThrGlyAlaThrGl	1349	타
CAGGGGAGGAT 1417	GTCTGGGGGTTCTTCATGCCCCCAGGGGCAG	1476	Qy
rCysCysThrC 1349	rThrGlyCysCysGlyGlyAlaCysAlaCysAlaAlaThr-ThrCysCysThrC	1331	В
TTGTGGTGAAG 1477	-	1530	Qy
AlaCysThrTh 1331	CysThrGlyAlaCysThrThrGlyThr	1312	DЬ
STGTGTTCCCG 1531	CGT	1584	Qy
ThralaThrG1 1312	sGlyAlaCysGlyCysThrGlyCysCysAlaAlaAlaAlaGlyCysT	1292	Db
GG 1585	TGCTAAGCAGGCCTGTCTCCTGCAGCC	1613	Qy
ThrThr	yAlaCysAlaCysThrThrAlaThrGlyThrCysGlyCysAlaAlaAlaAla	1272	В
CGCACT 1614	-GCACTGTCTGGATCTCATCTAGCGTGGCTTTTGCGACCTCGGATCCGCTC	1667	Qy
::: AlaAlaThrGl 1272	allaThralaAlaThralaAlaThrThrCysAlaThrAlaCysGlyAlaAlaAlaT	1252	Db
CAGAGT 1668	AGCTTCTGCCGGTTGAGGGGACTGGTCCCCATAGAGCAGGGTGTGGTATTC	1722	Qy
GlyCysCysAl 1252	sCysGlyAlaAlaGlyGlyCysCysGlyCysCysAl	1240	Db
CTTGCTGTCT 1723	CCACAAGGCAGCACAGCATACATCTTCTGGCTGATGGGACCGAGCAACTT	1782	Qy
AlaGlyCysCy 1240	rGlyCysCysAlaAlaThrGlyThrThrCysAlaAlaCysGlyCysGlyAlaGlyCys	1220	Db
CCCGATGCCC 1783	TGGAGGAGTGCATCTCATTCCACACGGTGTCACTGTCCAC	1832	Qy
::: 	ahlaCyshlaGlyCyshlaGlyCysGlyhlaAlaAlaCysGlyhlaGlyhlaTh	1202	DЬ
GCGCACAGCAC 1833	CTCCTGCAGCCACCTTGAAGGCCAGCTCCAGCAGGCAGCCCACTGCCATG	1892	Qγ
AlaAlaCysAl 1202	aCysGlyAlaAlaGlyAlaAlaAlaAlaGlyCysCysGlyCysCysGlyAlaAlaCysAl	1182	рь
ATTCTTGAGCT 1893	CTGTGGATTCCTCGGCGTGGTGTCCTGGGGGCCGGATGATGGCAAATCCA	1952	Qy
AlaAlaAl 1182	CysThrCysCysGlyAla-CysGlyGlyGlyAlaAlai	1168	Дb
SAATCCCATGG 1953	agagttgaaga <i>i</i>	2012	Qy
ys 1167	AlaAlaCysGlyAlaCysThrGlyGlyThrCys	1157	Db
SCCCACGTTCA 2013	TGGTGAATGTCCCAGTCCACGAT	2072	Qy
ThrGlyAlaAlaThrAla 1156	:::	1137	Db
GTAGAACGCCT 2073	GATGCAGAGAGA	2123	Qy

B 64	ОУ ДЪ	g Qy	DP QA	Db Qy	ОУ	Db Db	유 양	g 94	DP DA	Qу	Qy Db	рb	g 2	Оy	В
351 1691	408 1671	468 1660	525 1640	585 1626	645 1611	690 1593	750 1578	798 1558	858 1540	917 1522	945 1503	978 1483	1014 1463	1059 1453	1436
GGCCCGCACCTGT 338 ACysGlyThrCys 1695	CTGTTGGGAGAGCTGGGGCCGGAGCCGGGTGCGCTGTTACACACGGACGACGCCCCA 3	TCAGTGGGGATGTTGGGGACTGAGCCAGTAAAGCCATTCTCAGCGATGGTGGTGGTGGGAG 4	AGGCTGAACTGGTTGGGGGAGCTGTCCAGAGGGAGGGCTCCGGTGCTGAGGGAGCATC 4	GTGACAGTGACCGTGGCCCTAGGGAGATGTTGGGCAGAGAAGGAGACGTGTAG 5	GCCTGCCTCTCGGCCTCCTGCTGTGTCGACACCTTCGGGGAGGCAGTGAGGTGTGAGTTG 5	ATGAACTTGCCGGTCAGCGTGCCACCCTGCCGCAGGGACTGGAGG 6	GGGCTCCCGTCGCCCTCCAGTGCCACGCCAGCAGCAGCAGCAGCAGGAATAGAGGATGTGCTC 6 ::::: :: GlyThrThrGlyThrAlaThrAlaThr-GlyAlaAlaAlaThrAla 1	GCCTGCTCCAGCAACAGCACATGCTGCAGCAGGAGGCATGCCCGTGG 7	<pre>3TGGGGACTGCCCGTGGAGTGGCACAGCAATGAGGGTGCTCTGCTGCCGG 7 :: </pre>	-TCAGGGGCCGATGCCGCGGGAGCTTGCCTACCGTCCGCATGCTGGTGGCCACACGTTCA 8 ::	GlyAlaCysGlyCysCysThrGlyCys-AlaAlaAlaAlaAlaThrCysGlyAlaThrAl 1	ATGACCAGCTGCAGGGCCTGGGGACTC CysAlaThrGlyCysThrGlyCysCysAlaAlaCysGlyAlaThrGly	TGCTTCTGC	AGCTCCCCTGTCTTGGTGAGGATCTTGCCCAGCTGTAGCTGCTGCTGC1	::: ::: :::::
	.691	409 1671	469 1660	526 1640	625	646 1611	691 1592	751 1577	799 1557	859 1539	918 1522	946 1502	979 1482	1015 1462	1452

Search completed: March 21, 2003, 13:07:56 Job time: 71.35 secs

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Result

Query

SUMMARIES

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Post-processing: Minimum Match 0%
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18: /SIDS2/gcgdata/1

19: /SIDS2/gcgdata/2

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

ALIGNMENTS

AAB43008 standard; Protein; 1141 AA.
AAB43008;
08-FEB-2001 (first entry)

RESULT 1 AAB43008

Human ORFX ORF2772 polypeptide sequence SEQ ID NO:5544.

Human; open reading frame; ORFX; detection; cytostatic; hepatotropic; vulnerary; antipsoriatic; antiparkinsonian; nootropic; neuroprotective; anticonvulsant; osteopathic; antiarthritic; immunosuppressant; cardiant; immunostimulant; thrombolytic; coagulant; vasotropic; antidiabetic; hypotensive; dermatological; immunosuppressive; antidiabetic; hypotensive; antibacterial; antifungal; antifheumatic; antithyroid; antianaemic; gene therapy; cancer; proliferative disorder; hypertension; neurodegenerative disorder; osteoarthritis; graft vs host disease; cardiovascular disease; diabetes mellitus; hypothyroidism; SCID; AIDS;

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                                                                                                                                                                                                                                                                                                                CC which represent the human ORFX open reading frames 1 to 3161. The ORFX CC sequences have activities such as: cytostatic; hepatotropic; vulnerary; CC antipsoriatic; antiparkinsonian; nootropic; neuroprotective; costeopathic; anticonvulsant; antiarthritic; immunosuppressant; CC immunostimulant; cardiant; thrombolytic; coagulant; vasotropic; cc antidiabetic; hypotensive; dermatological; immunosuppressive; cc antithyroid; and antianaemic. The sequences can be used for determining CC antithyroid; and antianaemic. The sequences can be used for determining CC the presence of or predisposition to, or preventing or treating CC nucleic acids can be used to express ORFX proteins in gene therapy cc vectors. The proteins and nucleic acids may be used to treat cancers, CC proliferative disorders, neurodegenerative disorders, osteoarthritis, CC profiferative disorders, neurodegenerative disorders, osteoarthritis, CC profiferative disorders, cardiovascular disease, diabetes mellitus, hypothyroidism, cholesterol ester storage, systemic lupus crythematosus, severe combined immunodeficiency (SCID), AIDS, viral, CC profiferative disorder infection, malaria, autoimmune disorders, asthma, CC allergies, aplastic anaemia, burns, wounds, bone and cartilage damage, cc coagulation; to inhibit thrombosis; and as a contraceptive.
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05-APR-1999;
30-MAR-2000;
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 nHisVal 467	448 GlyValAlaLeuGluGlyAspGlySerProHisGlyHisAlaSerLeuLeuGln	Db 4	
GCATGTG 781	2 GGCGTGGCACTGGAGGGCGACGGGAGCCCCCACGGGCATGCCTCCCTGCTG		
CysLeuLeu 447			
CCTGCTG 721	2 CAGGGTGGCACGCTGACCGGCAAGTTCATGAGCACATCCTCTATTCCTGGC		
rLeuArg 427			
CTGCG	2 GCCTCCCGAAGCTGTCGACACAGAGAGGAGGCCGAGAGGCAGGC		
 LeuThr 4			
CTCAC	2 CTGCCCAACATCTCCCTAGGGCTGCAGGCCACGGTCACTGTCACCAACTCAC	•	
 rProSer 387	368 HisArgAlaLeuProLeuAspSerSerProAsnGlnPheSerLeuTyrThrSer	•	
CCTTCT 5	2 CACCGAGCCCTCCCTGGACAGCTCCCCCAACCAGTTCAGCCTCTACACGT		
uProGln 367		•	
CCTC	2 ATCGCTGAGAATGGCTTTACTGGCTCAGTCCCCAACATCCCCCACTGAGATGCT		
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AGCAC	2 TCCGTGTGTAACAGCGCACCCGGCTCCGGCCCCAGCTCTCCCAACAGCTCC		
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GCGTC	2 GTTATTAGCACCTTTAAGAAGAGAGCTGTTGAGATCACAGGTGCCGGGCCTGG	Qy 3	
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                                                                              AlaIleThrAlaLysLeuLeuGlnGlnLysLeuAsnValGlyLysValLeuIleValAsp
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441 LeuPheSerAspAlaGlnProLeuGlnProLeuGlnValTyrGlnAlaProLeuSerLeu 46	. 4
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241 GlyValAlaLeuGluGlyAspGlySerProHisGlyHisAlaSerLeuLeuGlnHisVal 260	Db 2
22 GGCGTGGCACTGGAGGGCGACGGGAGCCCCCACGGGCATGCCTCCCTGCTGCAGCATGT	
221 GlnGlyGlyThrLeuThrGlyLysPheMetSerThrSerSerIleProGlyCysLeuLeu 240	Db 2

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present invention

inhibitors

sent invention provides inhibitors of histone deacetylase enzymes HDAC-1, HDAC-2, HDAC-3, HDAC-4, HDAC-5, HDAC-C and HDAC-D. These ors may be antisense strands or they may be compounds identified acting the enzyme with the compound and measuring the resulting activity. These inhibitors are useful for treating cancers and for the compound and the control of the con

which histone deacetylase is involved in a neoplasia

Disclosure;

Page 62-64;

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                                                                                                                                                                                                                                                                                                      The invention relates to an agent that inhibits an isoform of histone deacetylase (HDAC-1 to HDAC-8) but not all isoforms, e.g. an antisense oligonucleotide. Also included are inhibiting an HDAC isoform in a cell by treatment with the agent, identifying an HDAC isoform that is required for induction of cell proliferation or differentiation and inhibiting cell proliferation by treatment with two antisense oligonucleotides or small molecules that inhibit aspecific HDAC isoform, or antisense oligonucleotide or small molecules that inhibit but is specific and isoform, or antisense oligonucleotide or small molecules that inhibit of isoform, or antisense oligonucleotide or small molecules that inhibit but as the state of the agent therefore acts as a tumour suppressor. The agent therefore acts as a tumour suppressor. The agent of cell proliferation and differentiation (e.g cancer and tumours), by inducing growth retardation, growth arrest or programmed/necrotic cell death, specifically neoplastic cell proliferation in humans. The agents are selective for particular management of the united sections which are not selective.
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(BONF/)
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tumourigenesis; cancer; inhibitor; antisense;
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Alignment
                                                    The present invention provides inhibitors of histone deacetylase enzymes such as HDAC-1, HDAC-2, HDAC-3, HDAC-4, HDAC-5, HDAC-C and HDAC-D. These inhibitors may be antisense strands or they may be contacting the enzyme with the compound and measuring the resulting enzyme activity. These inhibitors are useful for treating cancers and for identifying which histone deacetylase is involved in a neoplasia.
                                                                                                                                                                                        Antisense oligonucleotide that inhibits expression of a histone deacetylase, useful for treating and/or alleviating the symptoms neoplasia, or for inhibiting neoplastic cell growth in an animal
                           Sequence
                                                                                                                                                                                                                                                                                                                                                          03-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                       03-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                   30-NOV-2000
                                                                                                                                                              Disclosure;
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                                                                                                                                                                                                                                                                                               Li Z,
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Best Local Query Matc Percent Similarity: Score: Similarity:

Мо.:

4.24e-173 2691.00 71.38% 59.11% 50.34% Length:
Matches:
Conservative: Gaps: Mismatches: Indels:

967 568 118 195 81 23

US-09-502-945-2 (1-2885) x AAB49957 (1-967)

Вþ Qy Q 밁 ρ 망 δÃ δÃ ġ Qy В 망 δÃ В Qy 멍 δÃ 밁 191 172 356 157 296 137 236 117 176 100 116 80 62 60 N CACAGCACCATCGCTGAGAATGGCTTTACTGGCTCAGTCCCCCAACATCCCCCACTGAGATG TCAAGGCTAAAACAGAAGGTGGCTGAGCGGAGAAGCAGTCCCCTCCTGCGTCGCAAGGAT CCCCAGAGCGCCCCCTGGGACGCCTCCCTACAAACTGCCTTTGCCTGGGCCCTAC SerAspProArgTyrTyrGlyLysThrGlnHisSerSerLeuAspGlnSerSerPro GluPheValLeuAsnLysLysLysAlaLeuAlaHisArgAsnLeuAsnHisCysIleSer SerLeuAlaHisArgLeuValAlaArgGluGlySerAlaAlaProLeuProLeuTyrThr CTCCCTCAGCACCGAGCCCTCCCCTCTGGACAGCTCCCCCAACCAGTTCAGCCTCTACACG GlySerValSerAlaGluAsnGlyTleAlaProAlaValProSerTleProAlaGluThr GlyProValValThrAlaLeuLysLysArgProLeuAspValThr----GGGACTGTTATTAGCACCTTTAAGAAGAGAGCTGTTGAGATCACAGGTGCCGGGCCTGGG SerArgLeuLysGlnLysValAlaGluArgArgSerSerProLeuLeuArgArgLysAsp ProGlnSer-----GlyValSerThrSerTyrAsnHisProValLeuGlyMetTyr CAGCACCCCAAATGCTGG-----GGAGCCCACCATGCTTCTTTGGACCAGAGTTCCCCT 136 532 472 190 412 171 355 156 295 235 116 99 115 61 79

555	_euValTyrAspThrLeuMetLeuLysHisGlnCysThrCysGlySerSer	DЬ
	81 ACCACAAGTGTGGTCTACGACACGTTCATGCTAAAGCACCAGTGCATGTGCGGGGAACACA	Qy
535	AlaThrPheProValSerValGlnGluProProThrLysProArgPhe	DЬ
1480	CCCCTGGGGGCATGAAGAACCCCCCAGACCAACCCGTCAAGCACCTCTTC	Qy
\vdash	 ProValSerPheGlyGlyHisArgProLeuSerArgAlaGlnSerSerProAla	В
1429	TGCCCCACCAAGCCCTGGGCCGTACCCAATCCTCCCCTGCT	Qy
498	} AsnTyrGlnAlaSerMetGluAlaAla	Db
1384	NACCGCTGCAACCTTTGCAGGTGTACCAAGCGCCCCTCAGCCTGGCC	Qy
478	460 GluProGlyGlnArgGlnProSerGluGlnGluLeuLeuPheArgGlnGlnAlaLeu	Db
1324	65 GAGAGTGGTGCTGAGGAGGGGCCCGACTTGGAGGAGCCCTGGTGCTGGATACAAAAAACTG	Qy
459		DЪ
1264	05 GACGAGGAAGAGGATGGGGAGGAGGAGGAGGATTGCATCCAGGTTAAGGACGAGGAGGGC	Qy
444	SlnLysGluAlaHisAlaGlnAlaGlyValGlnValLysGlnGlu	Db
1204	CGGGAGGGCTCCACAGAGAGTGAGAGCACACAGGAAGACCTGGAGGAGGAG	Qy
425	 pGluProTyrLeuAsp	рь
1144	AGACAGAGGAGGAGCTGACGGAGCAGCAGGAGGTCTTGCTGGGGGGAGGGA	Qy
406		DЬ
1087	GGGCAAGATCCTCACCAAGACAGGGGAGCTGCCCAGGCAGCCCACCACCCAC	Qy
386		DЬ
1027	GCACCAGCAGTTCCTGGAGAAGCAGAAGCAGCAGCAGCTACAG	Qy
366		DЬ
979	GCACTCAGTCCTCACCGCTGCCGCAGAGTCCCCAGGCCCTGCAGCAGCTGGTCATGCAA	Qy
346	uArgGlnHisArgProLeuGly	DЪ
919	0 GAACGTGTGGCCACCAGCATGCGGACGGTAGGCAAGCTCCCGCGGCATCGGCCCCTGAGC	Qy
329	::: 	Db
859	12 ACCCTCATTGCTGTGCCACTCCACGGGCAGTCCCCACTAGTGACGGGT	Qγ
310		Db
811	TGGAGCAGGCCCGGCAGCAGAGC	Ωy
291	ProLeuGluArgAspGlyGlyAla	Db
751	ACATCCTCTATTCCTGGCTGCCTGCTGGGCGTGGCACTGGAGGGCGACGGGAGCCCC	Qy
280	 :::::::::::::::::::::::::::::::	DЬ
691	CAGTCCCTGCGGCAGGGTGGCACGCTGACCGGCAAGTTCATG	Qy
260	GlyProSerAlaGlyThrAlaGlyGlnGlnAspThrGluArgLeuThr	Db
646	CAGCAGGAGGCCGAGAGGCAGGCC	Qy
244	231 SerProSerLeuProAsnIleThrLeuGlyLeuProAlaThr	Дb
592	GCCACGGTCACTGTCACCAACTCA	Qy

268	1 CAGAAGTTCGCCGCTGGTCTGGGCCGGTCCCTGCGAGGGGGCCCAAGCAGGTGAC	Ñ	Qy
		89	Db -
	1 AACGCAGTGGCCACGCTAGAGAAAGTCATCGAGATCCAGAGCAAACACTGGAGCTGTG	256	Qy
		87	ДЬ
	1 CTGCTCAGTGTAAAGCTGCAGCCCTTGGATGAGGCAGTCTTGCAGCAAAAAGCCCCAAC	250	Qy
		85	Db
	1 CTGGAGGGAGGCCATGACTTGACCGCCATCTGTGATGCCTCTGAAGCTTGTGTCTCGGC	4	Qy
		83	рь
	1 TGTTTTGGCCACTTGACCAGGCAGCTGATGACCCTGGCAGGGGGGCCGGGT	œ	Qy
		81	Дb
	1 GGGTTTGATGCTGTTGAAGGACATCTGTCTCCTCTGGGTGGCTACTCTGTCACCGCCAG	Ν	Qy
		79	DЬ
	1 AGGACAGTGGTGATGCCCATTGCCCACGAGTTCTCACCTGATGTGGTCCTAGTCTCCGC	226	Оу
	5	77	Дb
	1 GTGGCATGGACAGGAGGTGTGGACCCCCCCATTGGAGACGTGGAGTACCTTAC	220	Qy
		75	ф
	1 CCAGGCTCTGGGGCTCCTGAAGAGGTTGGTG	214	Qy
		73	ф
	1 TACAATGACCCCTCTGTGCTCTACATC	208	Qy
	.5 SerLysIleLeuIleValAspTrpAspValHisHisGlyAsnGlyThrGlnGlnAlaPhe	71	ф
	1 GGCAAGGTCCTCATCGTGGACTGGGACATTCACCATGGCAATGGCACCCAGCAGG	202	Qy
		69	Дb
	1 TTCTGCTTCTTCAACTCTGTAGCCATCACCGCAAAACTCCTACAGCAGAAGTTGAAC	6	Qy
		67	В
	1 AATGGATTTGCCATCATCCGGCCCCCAGGACACCACGCCGAGGAATCCACAG	190	Qy
		65	DЬ
	1 CGCATGCCAGTGGGCTGCCTGCTGGAGCTGGCCTTCAAGGTGGCTGCAGGAGAGG	4	Qy
	:::	63	ф
	1 GGGGGCATCGGGGTGGACAGTGACACCGTGTGGAATGAGATGCACTCCTC	8	Qy
		61	Db
	1 CTAGACAGCAAGAAGTTGCTCGGTCCCATCAGCCAC	N	Qy
		59	Db
	1 ACAGTGCACTCTGAATACCACACCCTGCTCTATGGGACCAGTCCCCTCAACCGG	6	Qy
		57	Дb
	1 GGCCTGCTTAGCAAGTGCGAGCGGATCCGAGGTCGCAAAGCCACGCTAGATGAGATC	0	Qy
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	1 CACGTGCACCCTGAGCATGCTGGCCGG	4	γo

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RESULT 6
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programmed
                         N-PSDB;
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                                                                                     BONFILS C.
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tumour suppressor; cell proliferation; tumour;
cell death; necrotic cell death.
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Best Local Similarity:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention relates to an agent that inhibits an isoform of histone deacetylase (HDAC-1 to HDAC-8) but not all isoforms, e.g. an antisense oligonucleotide. Also included are inhibiting an HDAC isoform in a cell by treatment with the agent, identifying an HDAC isoform that is required for induction of cell proliferation or differentiation and inhibiting cell proliferation by treatment with two antisense inhibiting cell proliferation by treatment with two antisense.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     useful for treating cancer and other cell proliferative diseases, preferably comprises an antisense oligonucleotide
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                                                                                     CTCCCTCAGCACCGAGCCCTCCCCTCTGGACAGCTCCCCCAACCAGTTCAGCCTCTACACG 532
                                                                                                             GlySerValSerAlaGluAsnGlyIleAlaProAlaValProSerIleProAlaGluThr
                                                                                                                                                                                     GCGTCGTCCGTGTGTAACAGCGCACCCGGCTCCGGCCCCAGCTCTCCC---AACAGCTCC
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                                                             {f Ser Leu Ala His Arg Leu Val Ala Arg Glu Gly Ser Ala Ala Pro Leu Pro Leu Tyr Thr
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-GTGAACGCCATGGCCTTGCTGTTGGTGGGGGCCGAAC
CGCTGGTCTGGGCCGGTCCCTGCGAGGGGCCCAAGC ::: .rSerThrAlaGlyArgSerLeuIleGluAlaGlnTh
AGTGGCCACGCTAGAGAAAGTCATCGAGATCCAGAGCAAACACTGGAGCTGTG ::::: :::
TAAAGCTGCAGCCCTTGGATGAGGCAGTCTTGCAGC. :::
GCCATGACTTGACCGCCATCTGTGATGCCTCTGAAG
CACTTGACCAGGCAGCTGATGACCCTGGCAGGGG ::: ::: TyrLeuThrLysGlnLeuMetGlyLeuAlaGlyG
TGTTGAAGGACATCTGTCTCTCTGGGTGGCTACTCTGTCA::::
GTGATGCCCATTGCCCACGAGTTCTCACCTGATGTGGTCCTA
ACAGGAGGTGT6GACCCCCCATTGGAGACGTGGAGTA ::: ::: !ThrGlyGlyLeuAspProProMetGlyAspAlaGluTy
:TGGGGCTCCTGAAGAGGTTGGTGGAGGACCAGGCGT(::: TGLYALaProAspGluValGLyThrGLyProGLyVal
ACCCCTCTGTGCTCTACATCTCTCTGCATCGCTATG
TCATCGTGGACTGGGACATTCACCATGGCAATG
:TTCAACTCTGTAGCCATCACCGCAAAACTCCTAC PheAsnSerValAlaValAlaAlaLysLeuLeuG
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AGTGGGCTGCCTGGAGCTGGCCTTCAAGGTGG AVa1G1yCysVa1Va1G1uLeuVa1PheLysVa1A
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11-JAN-2000;
02-MAY-2000;
                                                                                                                             molecules have been determined. Primers for synthesising the full length cDNA are useful for clarifying the function of the protein encoded by the cDNA. The full length clones were obtained by construction of full length enriched cDNA libraries that were synthesised by the oligo-capping method. The primers enable the production of the full length cDNA easily without any special methods. The present sequence is a polypeptide encoded by a full length human cDNA of the invention.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in CD-ROM format directly from EPO.
                                                                                                                                                                                                              The invention relates to primers for synthesising full length clones. 830 cDNA molecules encoding a human protein have been isolated and nucleotide sequences of 5'- and 3'-ends of the cl
                                                                                                                                                                                                                                                                                                           WPI;
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27-APR-2000;
20-JUN-2000;
19-JUL-2000;
                                                                                                                                                                                                The invention relates to polynucleotides (AAK51456-AAK53435) and the encoded polypeptides (AAM78323-AAM80302) that exhibit activity elating t cytokine, cell proliferation or cell differentiation or which may induce production of other cytokines in other cell populations. The polynucleotides and polypeptides are useful in gene therapy, vaccines or peptide therapy. The polypeptides have various cytokine-like activities, e.g. stem cell growth factor activity, haematopoiesis regulating activity, tissue growth factor activity, immunomodulatory activity and activiny inhibin activity and may be useful in the diagnosis and/or treatment of care livity and may be useful in the diagnosis and/or treatment of care livity and may be useful in the diagnosis and/or treatment of care livity and may be useful in the diagnosis and/or treatment of care livity and may be useful in the diagnosis and/or treatment of care livity and may be useful in the diagnosis and/or treatment of care livity and may be useful in the diagnosis and/or treatment of care livity and may be useful in the diagnosis and/or treatment of care livity and may be useful in the diagnosis and/or treatment of care livity and may be useful in the diagnosis and/or treatment of care livity and may be useful in the diagnosis and/or treatment of care livity and may be useful in the diagnosis and/or treatment of care livity and may be useful the diagnosis and/or treatment of care livity and may be useful the diagnosis and/or treatment of care livity and may be useful the diagnosis and/or treatment of care livity and may be useful the diagnosis and/or treatment of care livity and may be useful the diagnosis and or treatment of care livity and may be useful the diagnosis and or treatment of care livity and may be useful the diagnosis and or treatment of care livity and may be useful the diagnosis and or treatment of care livity and may be useful the diagnosis and or treatment of care livity and may be useful the diagnosis and or treatment of care livity and may be useful 
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                                                                                                                                                                             treatment of cancer, leukaemia,
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20-OCT-2000;
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                                                                                Records for SEQ ID NO 2110 (AAK52581), 0020) are omitted as the relevant pages
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Yang Y,
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2000US-0560875.

2000US-0598075.

2000US-0598075.

2000US-0620325.

2000US-062325.

2000US-0634936.

2000US-0634936.

2000US-0693325.

2000US-0728422.
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16	GCAGTGGGCTGCCTGGAGCTGGCCTTCAAGGTGGCTGCAGGAGAGCTCAAGAATGGA 1	1847 697	р 9
96		67	문 5
76	AsnGlyLyclinian AsnGlyLeuLeuAlaGlyChuleuAlaGlyChuleuAl	1707	9
786	AGCAAGAAGTTGCTCGGTCCCATCAGCCAGAAGATGTATGCTGTGCCTTGCCTTGTGGGGGC 1	1727	Qy
56		637	Дb
726	CACTCTGAATACCACACCCTGCTCTATGGGACCAGTCCCCTCAACCGGCAGAAGCTAGAC 1	6	Qy
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ō.	GlyLeuIleTyrAspSerValMetLeuLysHisGlnCysSerCysGlyAspAsnSerArg 5		문 :
546	GGTCTACGACACGTTCATGCTAAAGCACCAGTGCATGTGCGGGAACACACAC	148	ρ
76	erGlnAlaArgValLeuSerSerSerGluThrProAlaArgThrLeuProPheThrThr 5	55	рь
486		1454	Qy
56		53	В
453	CTGGGCCGTACCCAATCCTCCCCTGCTGCCCCTGGGGGCATGAAGAACCCCC 1	1403	γQ
36		517	В
402	CTCAGCCTGGCCACTGTGCCCCACCAAGCC 1	1373	Qy
16	GlnHisProGlnValLeuLeuTrpGluGlnGlnArgLeuAlaGlyArgLeu 5	49	рь
372	AGGTGTACCAAGCGCCC1	ū	Qy
98	ArgGluLeuGlyHisGlyGlnProGluAlaArgGlyProAlaProLeu 4	483	дЬ
354	GAGCCTGGTGCTGGATACAAAAAACTGTTCTCAGATGCCCAACCGCTGCAACCTTTG 1	129	δō
82		47	DЬ
294	ATCCAGGTTAAGGACGAGGAGGGCGAGAGTGGTGCTGAGGAGGGGCCCCGACTTG 1	1241	Qy
69	rgGlnIleProSerAlaGluAspLeuGluThrAspGly 4	45	Db
240	CACAGGAAGACCTGGAGGAGGAGGAGGAGGAAGGAAGGATTGC 1	118	Qy
55	4	45	뫄
180	CTGGGGGAGGGAGCCCTGACCATGCCCCGGGAGGGCTCCACAGAGAGTGAGAGC 1	112	Qy
55	ProArg4	454	В
120	CAGCCCACCACCCTGAGGAGACAGAGGAGGAGCTGACGGAG	. 106	γQ
53	::::::	445	뮹
060	AAGCAGAAGCAGCAGCAACCTACAGCTGGGCAAGATCCTCACCAAGACAGGGGAGCTG 1	100	Qγ
4	GlyProMetGlnProArgLeuGluGlnLeuLysThrHisValGlnValIle	N	문 5
000	-CTGCAGCAGCTGGTCATGCAACAACAGCACCAGCAGTTC	9	οV

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27-APR-2000;
20-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The invention relates to polynucleotides (AAK51456-AAK53435) and the encoded polypeptides (AAM78323-AAM80302) that exhibit activity elating to cytokine, cell proliferation or cell differentiation or which may induce production of other cytokines in other cell populations. The polynucleotides and polypeptides are useful in gene therapy, vaccines or peptide therapy. The polypeptides have various cytokine-like activities, e.g. stem cell growth factor activity, haematopoiesis regulating activity, tissue growth factor activity, haematopoiesis regulating threatment of cancer, leukaemia, nervous system disorders, arthritis and information.
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20-OCT-2000;
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Wang D,
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                   ---GCTGAGGAGGGCCCGACTTG
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TrpAlaGlyGlyLeuAspProProMetGlyAspProGluTyrLeuAlaAlaPheArgIle
                                                         SerGlyAlaValAspGluValGlyAlaGlySerGlyGluGlyPheAsnValAsnValAla
                                                                                      TCTGGGGCTCCTGAAGAGGTTGGTGGAGGACCAGGCGTGGGGTACAATGTGAACGTGGCA
                                                                                                                                                                                                         GTCCTCATCGTGGACTGGGACATTCACCATGGCAATGGCACCCAGCAGGCGTTCTACAAT
                                                                                                                                                                                                                                      PhePheAsnSerValAlaIleAlaCysArgGlnLeuGlnGlnGlnSerLysAlaSerLys
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               ------GlyGlyProGlyGlnValValAspAspGlyLeuGluHis
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New caspase-8 interacting protein capable of interacting with subunit and/or subunit 2 of caspase-8, useful in the treatment of multiple sclerosis with primary oligodendrogliopathy, autoimmune uveoretinitis

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1497 ACGACACGTTCATGCTAAAGCACCAGTGCATGTGCGGGGAACACACGTGCACCCTGAGC 1556	ΟV
828 rgValLeuSerSerGluThrProAlaArgThrLeuProPheThrThrGlyLeuIleT 848	DЬ
ACCAACCCGTCAAGCACCTCTTCAC	Qy
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1413 CCCAATCCTCCCCTGCTGCCCCTGGGGGGCATGAAGAACCCCC 1453	Qγ
788 erThrGlyAspThrValLeuLeuProLeuAlaGlnGlyGlyHisArgProLeuSerArgA 808	ДЪ
1373	Qy
768 lnHisProGlnValLeuLeuTrpGluGlnGlnArgLeuAlaGlyArgLeuProArgGlyS 788	DЬ
1365 AAGCGCCC 1372	Qy
754 lyHisGlyGlnGluAlaArgGlyProAlaProLeuGlnG 768	Db
1305 GTGCTGGATACAAAAACTGTTCTCAGATGCCCAACCGCTGCAACCTTTGCAGGTGTACC 1364	Qy
738GlyGlyProGlyGlnValValAspAspGlyLeuGluHisArgGluLeuG 754	DЪ
AGAGTGGTGCTGAGGAGGGGCCCGACTTGG	Qy
727 leProSerAlaGluAspLeuGluThrAspGly 737	Db
1191 ACCTGGAGGAGGAGGAGGAGGAAGAGGATGGGAGGAGGAGGAG	Qy
724LeuArgGlnI 727	Db
1131 GGGAGGGAGCCCTGACCATGCCCCGGGAGGGCTCCACAGAGAGTGAGAGCACACAGGAAG 1190	Qy
723 723	Db
1071 CCACCACCCACCCTGAGGAGACAGAGGAGGAGCTGACGGAGCAGCAGGAGGTCTTGCTGG 1130	Qy
716AlaLysProSerGluLysProArg 723	Db
1011 AGCAGCAGCAGCTACAGCTGGGCAAGATCCTCACCAAGACAGGGGGAGCTGCCCAGGCAGC 1070	Qy
699 lnProArgLeuGluGlnLeuLysThrHisValGlnValIleLysArgSer- 715	рb
959CTGCAGCAGCTGGTCATGCAACAACAGCAGCAGCAGTTCCTGGAGAAGCAGA 1010	Qy
679 rgThrArgSerGluProLeuProProSerAlaThrAlaProProProProGlyProMetG 699	Db
921 GCACTCAGTCCTCACCGCTGCCGCAGAGTCCCCCAGGCC958	Qy
660 lnSerLeuMetThrThrGluArgLeuSerGlySerGlyLeuHisTrpProLeuSerA 679	Db
861 AACGTGTGGCCACCAGCATGCGGACGGTAGGCAAGCTCCCGCGCGCATCGGCCCCTGAGCC 920	Qy
640 lySerHisAlaProLeuLeuThrValProGlyLeuGlyProLeuProPheHisPheAlaG 660	Db
801 GGCAGCAGAGCACCCTCATTGCTGTGCCACTCCACGGGCAGTCCCCCACTAGTGACGGGTG 860	Qy
623 lyGlyThrLeuProSerArgLeuGlnProIleLeuLeuLeuAspProSerG 640	Db
741 ACGGGAGCCCCCACGGGCATGCCTCCCTGCTGCAGCATGTGCTGTTGCTGGAGCAGGCCC 800	Qy
606 lySerProHisThrProLeuPheLeuProHisGlyLeuGluProGluAlaG 623	Db
AGTTCATGAGCACATCCTCTATTCCTGGCTGCCTGCT	Qγ
586 laArgAlaAspSerAspArgArgThrHisProThrLeuGlyProArgGlyProIleLeuG 606	рь
621 CACAGCAGGAGGCCGAGAGGCCCTCCAGTCCCTGCGGCAGGGTGGCACGCTGACCG 680	Qy
 581 lyLeuProAlaProA 586	Db
561 GGCTGCAGGCCACGGTCACTGTCACCAACTCACACCTCACTGCCTCCCCGAAGCTGTCGA 620	Qy

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Alignment Scores: Pred. No.: Score:
                                                                                                      differentiation (e.g cancer and tumours), by inducing growth retardation growth arrest or programmed/mecrotic cell death, specifically neoplastic cell proliferation in humans. The agents are selective for particular isoforms, compared to known inhibitors which are not selective.
                                                                                                                                                                                                            The invention relates to an agent that inhibits an isoform of histone deacetylase (HDAC-1 to HDAC-8) but not all isoforms, e.g. an antisense oligonucleotide. Also included are inhibiting an HDAC isoform in a cell by treatment with the agent, identifying an HDAC isoform that is required for induction of cell proliferation or differentiation and inhibiting cell proliferation by treatment with two antisense oligonucleotides or small molecules that inhibit a specific HDAC
                                                                                                                                                                                                                                                                                                                                                                             Agent that specifically inhibits an isoform of histone deacetylase, useful for treating cancer and other cell proliferative diseases,
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N-PSDB; ABK87721.
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(BONF/) BONFILS C.
(BEST/) BESTERMAN J.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the specification. The primer sets can be used in antisense therapy and in gene therapy. The primers are useful for synthesising polynucleotides, particularly full-length cDNAs. The primers are also useful for the detection and/or diagnosis of the abnormality of the proteins encoded by the full-length cDNAs. The primers allow obtaining of the full-length cDNAs easily without any specialised methods. AAH03166 to AAH13628 and AAH13633 to AAH10742 represent human acute sequences; AAB92446 to AAB95893 represent human amino acid sequences; and AAH13629 to AAH13632 represent oligonucleotides, all of which are used in the exemplification of the control of the contr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present invention describes primer sets for synthesising 5602 full-length cDNAs defined in the specification. Where a primer set comprises: (a) an oligo-off primer and an oligonucleotide complementary to the complementary strand of a polynucleotide which comprises one of the 5602 nucleotide sequences defined in the specification, where the oligonucleotide sequences at least 15 nucleotides; or (b) a combination of an oligonucleotide comprising a sequence complementary to the complementary strand of a polynucleotide which comprises a 5'-end
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Sugiyama T, Wakamatsu
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A, Nagai K, Otsuki T;
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Db	62	LeuArgGlnIleProSerAlaGluAspLeuGluThrAspGly 75	
Qy	1241	GCGAGAGTGGTGCTGAGGAGGGG	
ДЪ	76	GlyGlyProGlyGlnValValAspAspGlyLeuG	
Qy	1295	GAGCCTGGTGCTGGATACAAAAAACTGTTCTCAGATGCCCAACCGCTGCAACCT	
DЬ	89	luLeuGlyHisGlyGlnPro	
Qy	1355	AGGTGTACCAAGCGCCC	
Db	105	 HisProG	
Qy	1373	CTCAGCCTGGCCACTGTG	
Db	123	SerThrGlyA	
Qy	ω		
DЬ	143	erArgAlaGlnSerSerProAlaAlaProAlaSerLeuSerAlaProGluProAl	
Qy	1454	AACCCGTCAAGCACCTC	٠,
Db	163	×	
Qy	1487	GTGGTCTACGACACGTTCATGCTAAAGCACCAGTG	٠,
Db	183	GlyLeuIleTyrAspSerValMetLeuLysHisGlnCysSerCysGlyAspAsnSerArg 202	
Qy	1547	CACCCTGAGCATGCTGGCCGGATCCAGAGCATCTGGTCCCGGCTGCAGGAGACAGGCCTG 1606	٥.
рь	203	HisProGluHisAlaGlyArgIleGlnSerIleTrpSerArgLeuGlnGluArgGlyLeu 222	
Qy	1607	CTTAGCAAGTGCGAGGGGATCCGAGGTCGCAAAGCCACGCTAGATGAGATCCAGACAGTG 1666	٠.
DЬ	223	LeuSerGlnCysGluCysLeuArgGlyArgLysAlaSerLeuGluGluLeuGlnSerVal 242	
Qy	1667	CACTCTGAATACCACACCCTGCTCTATGGGACCAGTCCCCTCAACCGGCAGAAGCTAGAC 1726	-
Db	243	ValLeuLeuTyrGlyThrAsnProLeuSerArgLeuLysLeuAsp 2	
Qy	1727	GCAAGAAGTTGO	-
DЬ	263	lyLysLeuAlaGlyLeuLeuAlaGlnArgMetPheValm	
· · · Qy	1787	ATCGGGGTGGACAGTGACACCGTGTGGAATGAGATGCACTCCTCCAGTGCTGTGCGCATG 1846	•
Db	283	lyValAspThrAspThrIleTrpAsnGluLeuHisSerSerAsnAla/	
Qy	1847	GGGCTGCCTGGAGCTGGCCTTCAAGGTGGCTGCAGGAGAGCTCAAGAATGGA 1	-
Db	303	.laAlaGlySerValThrAspLeuAlaPheLysValAla	
Qy	1907	TTTGCCATCATCCGGCCCCAGGACACCCACGCGAGGAATCCACAGCCATGGGATTCTGC 1966	-
DЬ	323	heAlaValValArgProProGlyHisHisAlaAspHisSerThrAlaMet	
Qy	1967	GTGGG	-
Db	343	hePheAsnSerValAlaIleAlaCysArgGlnLeuGlnGlnGlnSerLysAlaSer	
Qy	2027	- a	•
DЬ	363	leLeuIleValAspTrpAspValHisHisGlyAsnGlyThrGlnGlnThrPheTy	
Qy	2087	CCCTCTGTGCTCTAC	
Db	383	spProSerValLeuTyrIleSerLeuHisArgHisAspAspGlyAsnPhePheF	
Qy	2147	TCTGGGGCTCCTGAAGAGGTTGGTGGAGGACCAGGCCTGGGGTACAATGTGAACGTGGCA 2206	
Db	403		

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interactions
                                                                                       genes from Drosophila and for elucidating cell signalling and
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                                                                        NO 2271; 21pp + Sequence Listing;
                                                                                        cell-cell
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cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL3051), expressed DNA The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and The sequence data for this patent did not form specification, but was obtained in electronic f sequences (ABL01840-ABL16175) and the encoded proteins (ABB57737-ABB72072). at ftp.wipo.int/pub/published_pct_sequences n part of the printed
format directly from WIPO is

Sequence 1235 AA;

Pred.

No.:

Alignment Scores:

Query Match: Percent Similarity: Best Local Similari

1.36e-99 1601.50 50.23% 36.60% 29.96%

Gaps: Indels: Mismatches Conservative:

Qy Db	Qy Db	Qy Db	Qy Db	Qy Db	Qу Дъ	Qу Db	Qy Db	Фр	Фр	Фр	US-0
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CCTTCTCTGCCCAACATCTCCCTAGGGCTGCAGGCCACGGTCACTGTCACCAACTCACAC 595	CCTCAGCACCGAGCCCTCCCTCTGGACAGCTCCCCCAACCAGTTCAGCCTCTACACGTCT 535	ACTGGCTCAGTCCCCAACATCCCCCACTGAGATGCTC 475	GGCTCCGGCCCCAGCTCTCCCAACAGCTCCCACAGCACCATCGCTGAGAATGGCTTT 439	GAGATCACAGGTGCCGGGCCTGGGGCGTCGTCCGTGTGTAACAGCGCACCC 382 :::	AGTCCCCTCCTGCGTCGCAAGGATGGGACTGTTAATTAGCACCTTTAAGAAGAGAGAG	AACTTGAAAGTGCGTTCAAGGCTAAAACAGAAGGTGGCTGAGCGGAGAAGC 271 :::::: ::::::	TACGACAGTCGAGACGACTTCCCCCTCCGCAAAACAGCCTCTGAACCC 220 ::: 	AGCGGCCCCCTGGGACGCCTCCCTCCTACAAACTGCCTTTGCCTGGGCCC 172	CAGCACCCCAÁATGCTGGGGAGCCCACCATGCTTCTTTGGACCAGAGTTCCCCTCCCCAG 121 ::: ::: TyrArgAsnArgGlyValValLysSerSerSerGlyGlu 203	TTCCTCTTGTCGAAGTCAAAGGAGGCCACACCAGGCGGGCCTCAACCATTCCCTCCC	US-09-502-945-2 (1-2885) x ABB58493 (1-1235)

1302	243 CCAGGTTAAGGACGAGGAGGGCGAGAGTGGTGCTGAGGAGGGGCCCCGACTTGGAGGAGCC	2γ 1:
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1242	183 ACAGGAAGACCTGGAGGAGGAGGACGAGGAAGAGGATGGGGAGGAGGAGGAGGATTGCAT	Σγ
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_	667 LLeuThrSerThrIleAlaThrSerThrSerGlnAsnLeuProGluAlaLeuAlaAlaAl	
1125	.073ACCACCCACCCTGAGGAGACAGAGGAGGAGCTGACGGAGCAGCAGGAGGTCTT	1
667	647 pAspAspSerAlaAlaGluValMetAspLeuThrAspLysLysLysProProLysThrVa	Ob O
1072	.055GAGCTGCCCAGGCAGCCCC	2γ 1
647	627 aAlaAlaAlaAlaAlaAlaGlyValSerValValArgGluAlaGlnLeuLysGluGluAs	ф.
1054	054	느
105 4 627	016CAGCAGCTACAGCTGGGCAAGATCCTCACCAAGACAGGG 10:	0b 10
607	587 lGlnLeuAsnValValGlnThrHisTyrGluAsnSerGluAlaGluArgGlnAlaTyrGl	
1015	965 -CAGCTGGTCATGCAACAACAACAGCACCAGCAGTTCCTGGAGAAGCAGAAGCAG	
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964	913 CCTGAGCCGCACTCAGTCCTCACCGCTGCCGCAGAGTCCCCAGGCCCTGCAGACTCCCAGGCCCTGCAGACTCCCAGGCCCTGCAGACTCCCAGGCCCTGCAGACTCCCCAGGCCCTGCAGACTCCCCAGGCCCTGCAGACTCCCCAGGCCCTGCAGACTCCCCAGGCCCTGCAGACTCCCCAGGCCCTGCAGACTCCCCAGGCCCTGCAGACTCCCCAGGCCCTGCAGACTCCCCAGGCCCTGCAGACTCCCCAGGCCCTGCAGACTCCCCCAGGCCCTGCAGACTCCCCCAGGCCCTGCAGACTCCCCCAGGCCCTGCAGACTCCCCAGGCCCCTGCAGACTCCCCAGGCCCTGCAGACTCCCCCAGGCCCTGCAGACTCCCCCAGGCCCTGCAGACACTCCCCCAGACACTCCCCAGGCCCTGCAGACTCCCCAGGCCCTGCAGACACTCCCCAGACACACTCCCCCAGACACACAC	
912	880GCGGACGGTAGGCAAGCT	- ~
547	528 HisAlaHisGlyHisGlyHisGlyHisGlyHisGlyHisGlyHisGlyHisGlnHisAsn	ъ Б
879	823 TGTGCCACTCCACGGGCAGTCCCCACTAGTGACGGGTGAACGTGTGGCCACCAGCAT	υV
527	508 SerLeuProProThrAsnSerHisGlyHisGlyHisGlySerHisAlaHisProHisPro	
822	808GAGCACCCTCATTGC	Ωy
507	709	B 7
487	468 SerThrIleLeuProSerSerSerSerTyrMetGlnGlnLeuGlySerValAlaGlySer	-
768	767 CT	
467	448 ThrSerSerGlnAlaSerLeuValGlyAspValAlaProProGlnAlaHisAlaAla	₽.
766	731CTGGAGGGCGACGGGAGCCCCACGGGCATGCCTCC	ру
447	428 AlaThrGlyIleAlaProGlnGlnProSerProValValArgSerAlaSerAlaThrSer	₽
730	722GGCGTGGCA	Dy .
427	408 TyrAsnProLeuGlyMetAlaPheValGlyArgGlnProAlaProLeuAlaMetIlePro	Db dd
721	671ACGCTGACCGGCAAGTTCATGAGCACATCCTCTATTCCTGGCTGCCTGC	Qy
407	::: 388 AlaHisAlaMetPheAlaAlaLeuAlaAlaAlaGlnGlyGlyCysGlyGlnProGlyTyr	Db
670	644GCCTCCAGTCCCTGCGGCAGGGTGGC	Ωу
387	368 AlaGinValAsnAlaGinValAlaAlaGinAlaGinAlaGinAlaGinAlaGinAlaGin	Db
643	596 CTCACTGCCTCCCCGAAGCTGTCGACACAGCAGGAGGCCGAGAGGCAG	Qγ

2292	TGGAGACGTGGAGTACCTTACAGCCTTCAGGACAGTGGTGATGCCCATTGCCCACGAGTT:	2233	Qy
1068	GlyPheAsnValAsnIleSerTrpSerGlyAlaLeuAsnPr	1048	Db
2232	GACCAGGCGTGGGGTACAATGTGAACGTGGCATGGACAGGAGGTGTGGACCCCCCC	2173	Qy
2172 1048	GCATCGCTATGACAACGGGAACTTCTTTCCAGGCTCTGGGGCTCCTGAAGAGGTTGGTGGTC: ::: :::	1028	Ду Дъ
02	HisGlyAsnGlyThrGlnGlnAlaPheTyrGlnSerProAspIleLeuTy	Ō	Db
	ATG	Ü	Qy
1008		988	Db
2052	CTCCTACAGCAGAAGTTGAACGTGGGCAAGGTCCTCATCGTGGAACTGGGACATTC	1996	Оу
988	sAlaGluAlaAsnLeuAlaMetGlyPheCysPhePheAsnSerIleAlaIleAlaAlaLy	968	Db
1995	GCCGAGGAATCCACAGCCATGGGATTCTGCTTCTTCAACTCTGTAGCCATCACCGCA	1936	Qy
968	uLysThrAlaLysGlyAspLeuArgAsnGlyPheAlaValValArgProProGlyHisHi	948	Db
1935	GGTGGCTGCAGGAGAGCTCAAGAATGGATTTGCCATCATCCGGCCCCCAGGACACC	1876	Qy
948	nGluHisHisThrAlaThrAlaAlaArgMetAlaAlaGlyCysValIleAspLeuAlaLe	928	Db
1875	GAGATGCACTCCTCCAGTGCTGTGCGCATGGCAGTGGGCTGCCTGC	1816	Ωу
928	aSerPheValArgLeuSerCysGlyGlyLeuGlyValAspLeuAspThrThrTrpAs	909	Db
1815	TGCTGTGCTGCCTTGTGGGGGCATCGGGGTGGACAGTGACACCGTGTGGA	1756	Qy
909	erArgProLysLe	892	Db
1755	ACCAGTCCCCTCAACCGGCAGAAGCTAGACAGCAAGAAGTTGCTCGGTCCCATCAG	1696	Qy
892	gLysAlaThrGlnGluGluLeuGlnThrValHisThrGluAlaHisAlaMetLeuPheGl	872	Db
1695	AAAGCCACGCTAGATGAGATCCAGACAGTGCACTCTGAATACCACACCCTGCTCTATG	1636	Qy
872	uAsnGluThrAspLeuValLysArgCysAspArgLeuAr	852	Db
1635	ATCTGGTCCCGGCTGCAGGAGACAGGCCTGCTTAGCAAGTGCGAGCGGATCCGAGGTC	1576	Qy
852	SHisSerCysIleCysGlyAspAsnAlaGlnHisProGluHisSerGlyArgLeuGlnSe	832	Db
1575	CACCAGTGCATGTGCGGGAACACACACGTGCACCCTGAGCATGCTGGCCGGATCCAC	1516	Qy
832	OAisLysValThrThrGlyLeuAlaTyrAspProLeuMetLeuLy	817	Db
1515	ACAAGTGTGGTCTACGACACGTTCATGCT	1456	Qy
817	:::	800	Db
1455	TGCTGCCCTGGGGGCATGAAGAACCCC	1415	Qy
800		780	Db
1414	AGCCTGGCCACTGTGCCCCACCA	1373	Qy
780	rGlnIleProAspThrGlyGlnGlnProAlaProIleAlaThrSerSerSerAlaAspHi	760	Дb
1372	AAGCGC	1363	Qy
60		742	Db
1362	GGTGCTGGATACAAAAAACTGTTCTCAGATGCCCAACCGCTGCAACCTTTGCAGGT	1303	Ωу
742	: ::::::	727	Db

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              subunit
                                                       Claim
                                                                                              and/or subunit sclerosis with
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                                                                                                                                                                                                                                                                                                                                                                                                    Caspase-8 interacting protein; CIP; caspase-8 inhibitor; anti-apoptotic; N-acetylglucosamine-6-phosphate deacetylase; p55 TNF-R; neuroprotective; tumour necrosis factor receptor; anti-inflammatory, anti-diabetic; hepatotropic; virucide; cardiant; anti-ulcer; chromosome 12q31.
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28-SEP-1999;
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                           caspase-8
                                                                                        caspase-8 interacting protein capable of interacting with subunit 1 /or subunit 2 of caspase-8, useful in the treatment of multiple erosis with primary oligodendrogliopathy, autoimmune uveoretinitis
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interacting protein (CIP), capable of interacting with nd/or 2 of caspase-8, was identified by a yeast two hybuman placental cDNA clone P74. A similar sequence was a
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                                                        CCCAGGCCGGCAGAGGAGCCCATGGAGCAGGAG
                                                                          SerLeuSerValGlyIleLeuAlaGluAsp---
                                                                                              TTGCTGTTGGTGGGG-----GCCGAACAGGCCCCAAGCTGCGGCAGCCCGGGAACACAGC
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                                                                                                                                    TCCCTGCGAGGGGCCCAAGCAGGTGAGACCGAAGAAGCCGAAAT-GTGAACGCCATGGCC
                                                                                                                                                     {\tt IleArgValHisSerLysTyrTrpGlyCysMetGlnArgLeuAlaSerCysProAspSer}
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CC which represent the human ORRY open reading frames 1 to 3161 The ORFX CC sequences have activities such as: cytostatic; hepatotropic; vulnerary; CC antipsoriatic; antiparkinsonian; nootropic; neuroprotective; costeopathic; antiporvulsant; antiarthritic; immunosuppressant; cimmunostimulant; cardiant; thrombolytic; coagulant; vasotropic; cc antidiabetic; hypotensive; dermatological; immunosuppressive; cc antiinflammatory; antibacterial; antiviral; antifungal; antirhematic; cc antithyroid; and antianaemic. The sequences can be used for determining cc the presence of or predisposition to, or preventing or treating cc pathological conditions associated with an ORFX-associated disorder. The cucleic acids can be used to express ORFX proteins in gene therapy cc vectors. The proteins and nucleic acids may be used to treat cancers, cc proliferative disorders, neurodegenerative disorders, osteoarthritis, cc proteinsion, hypothyroidism, cholesterol ester storage, systemic lupus crythematosus, severe combined immunodeficiency (SCID), AIDS, viral, bacterial or fungal infection, malaria, autoimmune disorders, asthma, callergies, aplastic anaemia, burna, wounds, bone and cartilage damage, cc coagulation; to inhibit thrombosis; and as a contraceptive.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         31-MAR-1999;
02-APR-1999;
05-APR-1999;
30-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                hypotensive; dermatological; immunosuppressive; antiinflammatory; antiiviral; antibacterial; antiiungal; antiirheumatic; antiihyroid; antianaemic; gene therapy; cancer; proliferative disorder; hypertension; neurodegenerative disorder; osteoarthritis; graft vs host disease; cardiovascular disease; diabetes mellitus; hypothyroidism; SCID; AIDS; cholesterol ester storage; systemic lupus erythematosus; infection; severe combined immunodeficiency; malaria; autoimmune disorder; asthma; allergy; aplastic anaemia; nocturnal haemoglobinuria; burn; wound; bone damage; cartilage damage; antiinflammatory disease; coagulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; open reading irame; ORFX; detection; cytostatic; hepatotropic; vulnerary; antipsoriatic; antiparkinsonian; nootropic; neuroprotective; anticonvulsant; osteopathic; antiarthritic; immunospressant; cardiant; immunostimulant; thrombolytic; coagulant; vasotropic; antidiabetic; hynotensive, dormatological; immunospressant; cardiabetic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Novel nucleic acids and peptides derived from open useful for treating e.g. cancers, proliferative disneurodegenerative disorders and cardiovascular dise
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          08-FEB-2001
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Alignment Scores:

Sequence

β Qγ	Qу	Db Qy	Qy Db	Dy Dy	ОУ	Оy	ОУ	Qy Db	Оy	ДУ	Оy	Оy	Оу	Qу Дъ	Ф	US-09	Pred. Score Perce Best Query DB:
1890 GAGAGCTCAAGAATGGATTTGCCATCATCCGGCCCCAGGACACCACGCCGAGGAATCCA 1949	0 CCAGTGCTGTGCGCATGGCAGTGGGC ::: 4 erAsnAlaAlaArgTrpAlaAlaGly	1770 TGCTGCCTTGTGGGGGCATCGGGGTGGACAGTGACACCGTGTGGAATGAGATGCACTCCT 1829 ::	1710 ACCGGCAGAAGCTAGACAGCAAGAAGTTGCTCGGTCCCATCAGCCAGAAGATGTATGCTG 1769 ::	1650 ATGAGATCCAGACAGTGCACTCTGAATACCACACCCTGCTCTATGGGACCAGTCCCCTCA 1709 :: ::: :::	1590 TGCAGGAGACAGGCCTGCTTAGCAAGTGCGAGCGGATCCGAGGTCGCAAAGCCACGCTAG 1649 	1530 GCGGGAACACACACGTGCACCCTGAGCATGCTGGCCGGATCCAGAGCATCTGGTCCCGGC 1589 :: 	1470 AGCACCTCTTCACCACAAGTGTGGTCTACGACACGTTCATGCTAAAGCACCAGTGCATGT 1529 :::::: :::	7 = 3	6 AGGTGTACCAAGCGCCCCCAGCCTGGCCACTGTGCCCCAC ::: 	CAAAAAACTGTTCTCAGATGCCCAACCGCTGCAAC ::: argValGlyThrGlyLeuCysPro	GGAGGGCGA	79 GCACACAGGAAGACCTGGAGGAGGAGGACGAAGAAGAGGATGGGGAGGAGGAGGAGG 1	GGAGGGC1	CCACCACCCTGAGGAGACAGAGGAGGAGCTGACGAGCAGCA 	G1 C	09-502-945-2	ad. No.: 2.17e-96 Length: 541 are: 1552.50 Matches: 323 rcent Similarity: 65.62% Conservative: 74 cot Local Similarity: 53.39% Mismatches: 127 ary Match: 29.04% Indels: 82 caps: 12 12

83 TGGAGCAGGAG 2793 :: ::: 33 alGluGluGlu 536	27	Qу
	U	B 2
4 laAspLysGluG	J J	
O GTGAGACCGAAGAGCCGAAAT-GTGAACGCCATGGCCTTGCTGTT	2	γQ
84 rpGlyCysMetGlnArgLeuAlaSerCysProAspSerTrpValProArgValProGlyA	4	뮍
:610 GGAGCTGTGCAGAAGTTCGCCGCTGGTCTGGGCCGGTCCCTGCGAGGGGCCCAAGCAG	N	Qy
64 ysProAsnLeuAsnAlaIleArgSerLeuGluAlaValIleArgValHisSerLysTyrT	4	밁
50 AGCCCAACATCAACGCAGTGGCCACGCTAGAGAAAGTCATCGAGATCCAGAGCAAACACT	25	ρ
44 ysValAlaAlaLeuLeuGlyAsnArgValAspProLeuSerGluGlyTrpLysGlnL	4	рb
490 GTGTCTCGGCTCTGCTCAGTGTAAAGCTGCAGCCCTTGGATGAGGCAGTCTTGCAGCAAA	N	Ωy
24 alValLeuAlaLeuGluGlyGlyHisAspLeuThrAlaIleCysAspAlaSerGluAlaC	4	Дd
0	у 243	Qy
404 alSerAlaLysCysPheGlyTyrMetThrGlnGlnLeuMetAsnLeuAlaGlyGlyAlaV		B
0	y 237	Qy
84 euValSerAlaGlyPheAspAlaAlaGluGlyHisProAlaProLeuGlyGlyTyrHisV	ω	Вb
	y 2310	Qγ
64 euAlaAlaPheArgIleValValMetProIleAlaArgGluPheSerProAspLeuValL	ω	В
250 TTACAGCCTTCAGGACAGTGGTGATGCCCATTGCCCACGAGTTCTCACCTGATGTGGTCC	N	Q
44 heAsnValAsnValAlaTrpAlaGlyGlyLeuAspProProMetGlyAspProGluTyrL	ω	Вb
	y 2190	Qy
24 lyAsnPhePheProGlySerGlyAlaValAspGluValGlyAlaGlySerGlyGluGlyP	ω	B
	y 2130	Qy
304 lnGlnThrPheTyrGlnAspProSerValLeuTyrIleSerLeuHisArgHisAspAspG		밁
	y 2070	δ
:: InSerLysAlaSerLysIleLeuIleValAspTrpAspValHisHisGlyAsnAlaThrG	N	밁
	y 2010	Qy
:64 hrAlaMetGlyPheCysPhePheAsnSerValAlaIleAlaCysArgGlnLeuGlnGlnG	N)	Db
50 CAGCCATGGGATTCTGCTTCTTCAACTCTGTAGCCATCACCGCAAAACTCCTACAGCAGA	y 1950	Qy

Search completed: March 21, 2003, 12:43:23 Job time : 123.467 secs

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Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -MODEL-frame+_n2p.model -DEV=x1p
-Q-/cgn2_1/USPTO_spool/US05502945/runat_14032003_101058_19113/app_query.fasta_1.10979
-Q-/cgn2_1/USPTO_spool/US05502945/runat_14032003_101058_19113/app_query.fasta_1.10979
-DD-SPTREMEL_21 -QFMT-fastan -SUFFIX-rspt -MINMATCH=0.1 -LOOPCL=0 -LOOPEXT=0
-UNITS=bits -START=1 -END=-1 -MATRIX=blosum62 -TRANS-human40.cdi -LIST=45
-DOCALIGN=200 -THR_SCORE-pct -THR_MAX=100 -THR_MIN=0 -ALIGN=15 -MODE-LOCAL
-OUTEMT-pto -NORM-ext -HEAPSIZE-500 -MAXILEN-200000000
-USER-US09502945_@CGN_1_1_565_@runat_14032003_101058_19113 -NCPU=6 -ICPU=3
-NO_XLPXY -NO_MMAP -LARGEQUERY -NEG_SCORES=0 -WAIT -LONGLOG -DEV_TIMEOUT=120
-WARN_TIMEOUT=30 -THREADS=1 -XGAPOP=10 -XGAPEXT=0.5 -FGAPEXT=7
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-MODEL=frame+_n2p.model
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Fgapop 6.0 , I
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Q9cyh0 mus i
Q76329 dictyy
Q07380 sacch
O98tq6 notothenia
O9dgm4 gallus gall
O9c014 homo sapien
O9c013 homo sapien
O9c012 homo sapien
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                                                                                      AGCCAGCTGGCTTCTCGGGAAATGGATGTCACAAAGGTGTGTGGAGAAATGCGCTATCAG
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RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
RA Arakawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Ouackenbush J.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Ouackenbush J.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Ouackenbush J.,
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RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Brownstein M.J., Bultt C., Fletcher C., Fujita M., Gariboddi M.,
RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA Kawai H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA Sasaki H., Sato K., Wang K.H., Weitz C., Whittaker C., Wilming L.,
RA Hayashi-Roris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
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STRAIN=C57BL/6J; TISSUE=EMBRYO;
MEDLINE=21085660; PubMed=11217851;
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Mammalia; Eutheri
NCBI_TaxID=10090;
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EMBL; AK012392; BARD28209-1; -.
MGD; MGI:1924066; 2700048G21Rik.
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Similarity:

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Mismatches:
Indels:
Gaps:

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01-OCT-2000 (TrEMBLrel, 1:
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SEQUENCE FROM N.A.

TISSUB-CORD BLOOD;
Zhang Q.H., Ye M., Zhou J., Shen Y., Wu X.Y., Guan Z.Q.,
Fan H.Y., Mao Y.F., Dai M., Huang Q.H., Chen S.J., Chen
"Human partial CDS cloned from cd34+ stem cells.";
Submitted (MAY-1999) to the EMBL/GenBank/DDBJ databases.
EMBL; AF161348; AAF28908.1; -.

NON_TER

393

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SEQUENCE

393 AA; 44926 MW; FFF0D07090F39666 CRC64;
                                                                                                                                                                                           Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutharia; Primates;
NCBI_TaxID=9606;
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Last
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annotation update)
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US-09-502-945-1 (1-1552) x Q8R3K0
                                              Score:
                                                            Alignment
                                                                           Strausberg R.;
Submitted (MAR-2002)
EMBL; BC025138; AAH25
SEQUENCE 379 AA; 4
                                                                                                                        Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=10090;
                                                                                                                                                      01-JUN-2002 (TrEMBLrel. 21, Creat 01-JUN-2002 (TrEMBLrel. 21, Last 01-JUN-2002 (TrEMBLrel. 21, Last SIMILAR to RIKEN CDNA 2700048G21
                                                                                                           SEQUENCE FROM
                                                                                                                                                 Mus musculus (Mouse).
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                                                                                                                                                                                                                             ArgAlaIleGluLysAspMetMet
                                                                                                                                                                                                                                    AGGGCCATTGAGAAAGACATGATG
                                                                                                                                                                                                                                                                                        ATATCTGAGGAAGCCAATTTTGAAAAAAACCAAGGCTTTAATCCAGTGTGACCAGTTGAGG
                                                                                                                                                                                                                                                                                                                                                      GluArgLeuValLysGluArgAspAspLeuMetSerAlaLeuValSerValArgSerSer
                                                                                                                                                                                               PRELIMINARY;
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                                                                           (-2002) to th
; AAH25138.1
AA; 42775
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Alignment

Scores:

1.7e-25 521.00 88.55% 77.86% 19.07%

Length:
Matches:
Conservative:
Mismatches:
Indels:

379 102 14 15 0

(1-379)

Gaps:

Chordata; Rodentia;

Craniata; Vertebrata; | Sciurognathi; Muridae;

; Murinae; Mus

Created)

379

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annotation sequence

e update) ion update)

519

435

365

345 375 315

325

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265 135

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the W.

EMBL/GenBank/DDBJ

B20D32A9E193F53C

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Alignment : Pred. No.: Score:
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RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
RA Alzawa K., Izawa M., Nishii K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,
RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,
RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,
RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kaniya M., Lee N.H.,
RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,
RA Gustincich S., Hill D., Hofmann M., Rodriguez I., Sakamoto N.,
RA Mynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
RA Mynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
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01-JUN-2001
01-JUN-2001
                                                                                                                                    EMBL;
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STRAIN=C57BL/6J; TISSUE-EMBRYO;
MEDLINE=21085660; PubMed-11217851;
                                                                                                           SEQUENCE
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Mammalia; Eutheria;
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                                                                                                                                                                                           Nature
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; AK017691; BAB30877.1; -.
MGI:1917837; 5730470G24Rik.
FENCE 314 AA; 35730 MW; E
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Metazoa; Chordata; C
Metazoa; Rodentia;
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343.00
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                           B41F3B08B8EE418F CRC64;
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"Interaptin, an actin-binding protein of the alpha-actinin superfam
in Dictyostelium discoideum, is developmentally and cAMP-regulated
associates with intracellular membrane compartments.";
J. Cell Biol. 142:735-750(1998).
EMBL; AFGS7019; AAC34582.1;
EMBL; AFGS7019; AAC34582.1;
HSSP; P46939; 1QAG
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InterPro; IPR001715; Calponin-like.
InterPro; IPR001990; Granin.
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Eukaryota; Mycetozoa; Dictyosteliida; Dictyostelium
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                                        Similarity:
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                                                                                                  P$50021; CH; 2.

P$00422; GRANINS_1; UNKNOWN_1.

P$00101; HEXAPEP_TRANSFERASES; UNKNOWN_1.

1738 AA; 204427 MW; 577A99D2EC79AF5C CRC64;
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	21 AAAGACCAACTAAAGCATAAAGAATTTCTTCTGGCTGCTAATACTTGTAACCGT 174 ::: ::: ::: :::	9-502-945-1 (1-1552) x Q07380 (1-1790) 64 CAATTGAAGTTTTTGAGGAACGACTTAGCTGAATATCAGAGAACTTGTGAAGATCTT 1 ::: ::: 963 LysLeuLysSerLeuAlaAsnAsnTyrLysAspMetGlnAlaGluAsnGluSerLeuIle 9	ment Scores: 1.21e-08 Length: 179 No.: 256.50 Matches: 86 nt Similarity: 43.33% Conservative: 99 Lecal Similarity: 20.14% Mismatches: 169 Match: 9.39% Indels: 73 Match: 3 Gaps: 11	NCE FROM N.A. ker H., Brandt P.; ker H., Brandt P.; tted (JUL-1996) to the EMBL/GenBank/DDBJ databases 274106; CAA98621.1; 274105; CAA98620.1; \$2002216; USO1. Pro; IPR002017; Spectrin. Pro; IPR002017; Spectrin.	7 07380 PRELIMINARY; PRT; 1790 AA. 07380; P89892; 1-NOV-1996 (TrEMBLrel. 01, Created) 1-NOV-1996 (TrEMBLrel. 01, Last sequence update) 1-UN-2002 (TrEMBLrel. 21, Last annotation update) ypothetical 206.5 kDa protein yDL058W. SOl OR YDL058W. accharomyces cerevisiae (Baker's yeast). ukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetales;	204 CTGCGGACCCAGTTACCCAGCATGCCACAA 12 ::: ::: 314 LysaspGluLysLeuGlnSerIleGlnGln 13	144 CTCAGCAAGCAGAACCAGCTTCTCCTGGAGAGGGCAGAGCCTGTCGGAAGAGGTGGACCGG 120	105 AAGCACAGCCAGGCCACAGCCCAGCAG	.045 CAGTGTGTCCAGCATGGGAGAGTACATGAGACGATGAAGCAAAGGCTAAGGCAGCTGGAT 110	.000	946 CACCTCACCAGATCTGAAATAGCTCAACTCAGTCAAGAAAAAAGGTATACATAT 999 ::: ::::: ::: .214 GlnSerIleGlnGlnAspLeuAsnGlnLeuLysGlnGluAsnGlnGluLysGluLysGln 123	916	

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                                               GlnLeuGluLysIleThrAsnLeuSerLysAlaLysGluLysSerGluSerGluLeuSer
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Pfam; PF00063; Myosin_head; 1.
Pfam; PF02736; Myosin_tail; 1.
Pfam; PF01576; Myosin_tail; 1.
PRINTS; PR00193; MYOSINHEAVY.
ProDom; PD000355; Myosin_head; 1
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InterPro; IPR001609; myosin_head.
InterPro; IPR004009; Myosin_N.
InterPro; IPR002928; Myosin_tail.
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Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Musc
Ephydroidea; Drosophilidae; Drosophila.
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SMART; SM00242; MYSC; 1.
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FlyBase; FBgn0005634; zip.
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EMBL; U35816; AAB09048.1;
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LeuAspThrThrAlaAlaGlnGlnGluLeuArgSerLysArgGluGlnGluLeuAlaThr 1222
                                                   GCTAATACTTGTAACCGTGTTGGTGGTCTTTGTTTGAAATGTGCTCAG------
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LysValArgArgAspLeuSerGluGluLeuGluAlaLeuLysAsnGluLeuLeuAspSer
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                                                                                               LysGluThrLysValLeuSerValSerArgGluLeuAspGluAlaPheAspLysIleGlu
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Science 287:2185-2195(2000).
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Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Musc
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Pfam; PF0061; IQ; 1.
Pfam; PF00063; Myosin_head; 2.
Pfam; PF002736; Myosin_N; 1.
Pfam; PF01576; Myosin_Ltail; 1.
Pfam; PF001576; Myosin_tail; 1.
PRINTS; PR001935; MYOSINIBANY.
PRODOM; PD000355; Myosin_head; 1.
SMART; SM00242; MYSC; 1.
SMART; SM00242; MYSC; 1.
SMART; SM00242; MYSC; 1.
PR0SITE; PS50096; IQ; 1.
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                          TCAAAGATGTTGATCTTGTCTCAGAATATTGCCCCAACTGGAGGCCCCAGGTGGAAAAGGTT
                                                     GlnLeuThrGluAlaGlnGlnLeuLeuGluGluGluThrArgGlnLys------
                                                                                                         SerGluLeuGlnGluLysCysThrLysLeuGlnGlnGluAlaGluAsnIleThrAsnGln
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"Molecular organization and alternative splicing that encodes the Drosophila non-muscle myosin II J. Mol. Biol. 255:98-109(1996).
EMBL; U35816; AAB09049.1; -.
EMBL; U35816; AAB09050.1; -.
                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; MuscEphydroidea; Drosophilidae; Drosophila
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01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation updat
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                                                                                                                                                      SEQUENCE FROM N.A.
MEDLINE=96144835; PubMed=8568878;
Mansfield S.G., al-Shirawi D.Y.,
Kiehart D.P.;
                                                                                                                                                                                                                                                                                                                                                                                                              Drosophila melanogaster (Fruit fly)
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ZIP OR CG15792.
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FlyBase; FBggn0005634; Zip.

InterPro; IPR001048; IQ_region.

InterPro; IPR001609; myosin_head.

InterPro; IPR001609; Myosin_N.

InterPro; IPR004009; Myosin_N.

InterPro; IPR002928; Myosin_tail.

Pfam; PF00612; IQ; 1.

Pfam; PF00613; myosin_head; 2.

Pfam; PF00736; Myosin_tail; 1.

Pfam; PF01576; Myosin_tail; 1.

PRINTS; PR00193; MYOSINHEAVY.

ProDom; PD010355; myosin_head; 1.

SMART; SM00242; MYSC; 1.

PROSITE; PS50096; IQ; 1.

SMART; SM00242; MYSC; 1.
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AGGGCCATTGAGAAAGATGATGAAAAAGGAAATAACGAAAGGAAAGGAGTACATGGGA 555
                                                                                                 GluSerGlnIleAlaGlu---LeuGlnVal---LysLeuAlaGluIleGluArgAlaArg
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LysValArgArgAspLeuSerGluGluLeuGluAlaLeuLysAsnGluLeuLeuAspSer 1242
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22.49%
9.30%
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Matches:
Conservative:
Mismatches:
Indels:
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NCBI_TaxID=93934; [1] SEQUENCE FROM N.A. MEDLLINE=96591845; PubMed=8663323; Nikovits W., Wang G.F., Feldman J.L., Miller J.B., Wade R., Nelson L., Stockdale F.E.; "Isolation and characterization of an avian slow myosin heavy chain	01-NOV-1996 (TrEMBLrel. 01, Created) 01-NOV-1996 (TrEMBLrel. 01, Last sequence update) 01-JUN-2002 (TrEMBLrel. 21, Last annotation update) 01-JUN-2002 (TrEMBLrel. 21, Last annotation update) Slow myosin heavy chain 3. Coturnix coturnix japonica (Japanese quail). Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae; Coturnix.	31	::: ::: :::::: 44 AspAlaLysLeuArgLeuGluVal 16	LeuLysAlaGinAsnGluGluLeuGluAspAspLeuG GGCTGCGGACCCAGTTA 1218	132 CTGGTGCAGCTCCTCAGCAAGCAGAACCAGCTTCTCCCTGGAGAGGCAGAGCCTGTCGGAA 119		AGGCTAAGGCAGCTGGATAAGCACAGCCAGGCCACAGCCCAG	1012 ANSTIRCANANANANTHARMANITHARMANANTHARMANANTHARMANI	565 LysGluThrLysValLeuSerValSerArgGluLeuAspGluAlaPheAspLysIleGlu 1	952 ACCAGATCTGAAATAGCTCAACTCAGTCAAGAAAAAAGGTATACATATGATAAATTGGGA 1011	1545 LysalaIleSerGluGlnIleAlaGlnGluArgAspThrAlaGluArgGluAlaArgGlu 1564	898 GAGTGCCTGAGACTAACAGAACTGCTGGGCGGAATCTGAGCACCAACTGCACCTC 951		886CTGGCCAGAGAG 897	::: :::::: ::: 1505 SerLysLysIleGlnSerGluLeuGluAspAlaThrIleGluLeuGluAlaGlnArg 1524	GCAAACAACAC	### 11eGluAlaLeuGluArgGlnValLysGluLeuIleAlaGlnAsnAspArgLeuAspLys 1	796 CTTGAAATTAAAGATCAGGAAATAGAAATTGAGAATAGAACTGGATGAA 846	::: :::	736 ATGGAGAAGGATGAGGCAGAAAAGGAGCACAGAGAGTTCAGAGCAAAAACTAACAGGGAT 795	1446 TyrGluArgLysLeuAlaGluValThrThrGlnMetGlnGluIleLysLysLysAla 1464	AGGTGTGTGGAGAAATGCGCTATC	:::	616 ACAAAGGAAAAGATTTCAGCTATTAATCAACTGGAGGAAATTCAAAGCCAGCTGGCTTCT 675	1416LeuGlyLeuSerSerLysLeuArgGlnIleGluSerGluLysGluAlaLeu 1432	GATCTTGTCTCAGAATATTGCCCCAACTGGAGGCCCCAGGTGGAAAA	1400 GlnLeuThrGluAlaGlnGlnLeuLeuGluGluGluThrArgGlnLys 1415

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Pfam; PF02736; Myosin_N; 1.
Pfam; PF01576; Myosin_tail; 1.
PRINTS; PR00193; MYOSINHEAVY.
PRODOM; PD000355; myosin_head; 1
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J. BLO1. Chem. 271:17047-17056(1996).
EMBL; U53861; AAC59912.1; -.
EMBL; U53861; AAC59911.1; -.
HSSP; P08799; 1MND.
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SMART; SM00242; MYSc; 1.
PROSITE; PS50096; IQ; 1.
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InterPro; IPR001609; myosin_head.
InterPro; IPR004009; myosin_N.
InterPro; IPR002928; myosin_tail.
InterPro; IPR002917; Spectrin.
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LysLeuAlaGlnArgLeuGlnGluAlaGluGluAlaValGluAlaValAsnAlaLysCys
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                                                    SerSerLeuGluLysThrLysHisArgLeuGlnAsnGluIleGluAspLeuMetAlaAsp
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Alignment
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                                                                                                                                                                                                                                                                                                           AUTOIMMUNE DISEASE SJ
EMBL; X75304; CAA53052.1;
EMBL; D25542; BAA05025.1;
MIM; 602500; -.
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                DOMAIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Macrogolgin--a new 376 target of antibodies in infections.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=94257116; PubMed=8198703; Seelig H.P., Schranz P., Schroeter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Molecular genetic analyses of a 376-kilodalton Golgi complex membrane protein (giantin) [retracted in Mol Cell Biol 1995 Jan;15(1):591]."; mol. Cell. Biol. 14:2564-2576(1994).
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MEDLINE-94187728; PubMed-7511208;
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                                                                                                                                                                                                                                                                                                                                                  SPLICING.
DISEASE: ANTIGEN IN CHRONIC
                                                                                                                                                                                                                                                                                                                                                                     SUBCELLULAR LOCATION:
ALTERNATIVE PRODUCTS:
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SUBUNIT: DISULFIDE-LINKED HOMODIMER
                    Scores:
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1765
2950
A; 376075
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patients
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DIFFERENTS ISOFORMS MAY ARISE
                                    MISSING (IN REF. 3).
A -> AQLSSM (IN REF. 3).
D -> G (IN REF. 3).
H -> D (IN REF. 3).
MW; 60376A20D8A178DD CRC64;
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LUMENAL (POTENTIAL)
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Length: Matches:
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ALTERNATIVE
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ATGCGCTATCAGCTGAATAAAACCAACATGGAGAAAGGATGAGGCAGAAAAGGAGCACAGA
                                               GlnLeuIleGlnGluAlaAlaAlaGluAsnAsnLysLeuLysGluGluIleArgGly---
                                                                                                             LysAlaGlnLeuAspSerPheValLysSerMetSerSerLeuGlnAsnAspArgAspArg
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                                                                                                                                                                                                                                                                           AAAGAAAGGGAGTACATGGGATCAAAGATGTTGATCTTGTCTCAGAATATTGCCCCAACTG
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                                                                                                                                                                                                                                                                                                                                                                           ValAlaIleAlaGluLeuArgGlnGlnHisAspLysGluIleLysGluLeuGluAsnLeu
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                                                                                 -ATTCAAAGCCAGCTGGCTTCTCGGGAAATGGATGTCACAAAGGTGTGTGGAGAA
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Mismatches:
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RESULT 13
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ID Q9WVQ
AC Q9WVQ
DT 01-NO
DT 01-DE
Sperm
GN STAP
OS MUS m
OC EUKAR
OC Mamma
OX NCBI__
RN [1]
RP SEQUE
RC TISSU
RA Obuch
RT Sperm
RL Submit
DR EMBL;
KW Sperm
SQ SEQUE
Alignment Scores: Pred. No.: Score:
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SEQUENCE
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                                                                                                                                                           Ohuchi J., Arai T., Kon Y., Watanabe T.; "Sperm tail associated protein."; submitted (JUL-1999) to the EMBL/GenBank/DDBJ EMBL; AB029919; BAA82514.1; -
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Mammalia; Eutheria; Rodentia;
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01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation updat
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"Paramyosin from the parasitic mite Sarcoptes scabiei: and heterologous expression.";
submitted (CCT-2000) to the EMBL/GenBank/DDBJ databases EMBL; AF317670; AAKO1181.1;
InterPro; IPR002928; Myosin_tail.
Pfam; PF01576; Myosin_tail; 1.
SEQUENCE 876 AA; 102454 MW; C99475EE7A0DAE52 CRC64;
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01-JUN-2001 (TrEMBLrel.
01-JUN-2001 (TrEMBLrel.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CATATGCAGACCATCGAA-----AGACTGGTTAAAGAAAGAGATGACTTGATGTCTGCA
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                                          GluArg-----LeuValLysMetGluThrValLys-----LysSerLeuGluGlnGlu 714
                                                                        CAGAAGGCAGCCCTGGCCAGAGAGGAGTGCCTGAGACTAACAGAACTGCTGGGCGAATCT
                                                                                                   ArgValGlnLysLeuThrIleGluLeuLysSerThrLysAspLeuLeuValGluGluGln
                                                                                                                                                                                                                                                    AAC-----
                                                                                                                                                                                                                                                                              GlnAlaAsnArgAlaLysArgGlnAlaGluGlnLeuHisGluGluAlaValAlaArgVal 638
                                                                                                                                                                                                                                                                                             AAAACCAACATGGAGAAGGATGAGGCAGAAAAGGAGCACAGAGAGTTCAGAGGCAAAAACT
                                                                                                                                                                                                                                                                                                                                         CysGlnAlaLeuGlnAlaGluLeuGlu------GluGlnArgIleAlaLeuGlu
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                                                                                                                                                                                                                                                                                                                                                                                                  {\tt AspGluValHisArgGlnLeuGlnGlnAlaValAspGlnLeuGlyValThrGlnArgArg}
                                                                                                                                                                                                                                                                                                                                                                                                                               GAAAAGGTTACAAAGGAAAAGATTTCAGCTATTAATCAACTGGAGGAAATTCAAAGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                          {\tt AspLeuGlnLysThrIleLysLysGlnAlaLeuGlnIleThrGluLeuGlnAlaHisTyr}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TyrGlnAlaGlnIleThrGluLeuGluLeuSerLeuAspAlaAlaAsnLysAlaAsnIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MetArgLeuAlaGluAlaGluAlaLysLeuLysThrGluIleAlaArgLeuLysLysLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LysGluGluGluIleGluAlaLeuArgLysGlnTyrGlnIleGluIleGluGlnLeuAsn
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TyrLysGlu-----AlaGluThrLeuArgLysGlnGluGluAlaLysAsn
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                                                                                                                                                              PheAlaAlaLeuGlnAsnAspTyrAspGluValHisLysGluLeuArgIleSerAspGlu
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Qy	Db Qy	DP QA	Qy Db	Oy Db	Query DB: US-09-	Pred. Score: Percen	DR SQ Alic	ᄝᄝᄝ	RT	N R R R S	8888	# # # # # # # # # # # # # # # # # # #	RESULT Q90WH5 ID Q9	g Qy	д Оу	ОУ	dg Vo	Вb
181	157 GCTAATACTTGTAACCGTGTTGGT	118	79 AGGAACGACTTAGCTGAATATCAGAGAACTTGTGAAGAT	19 AAGCTAAAACTTACTTATGAGGAA 195 LysalaLysThrasnLeuGluLys	/ Match: 9.17% Indels: 13 Gaps: 3-502-945-1 (1-1552) x O90WH5 (1-891)	. No.: 2.98e-08 Length: 250.50 Matches: 250.54 Matches: Local Similarity: 23.198 Mismatches:	DR Pfam; PF01576; Myosin_tail; 1. SQ SEQUENCE 891 AA; 103485 MW; EE5A0043B36428B3 CRC64; Alignment Scores:	Submitted (JUL-1995) to the EMBL/GenBank/DDBJ databases. EMBL; D63466; BAB47396.1; - InterPro; IPR002928; Myosin_tail. InterPro; IPR002017; Spectrin.	Oana S., Machida S., Furutani Y., Hiratsuka E., Momma K., Takao A., Matsuoka R.; Matsuoka R.; "Characterization and expression of artial-specific myosin heacy chain gene in chick. How many genes are there?";	NCBL_TaxID=9031; [1] SEQUENCE FROM N.A. TISSUE-HEART MUSCLE:	Gallus gallus (Chicken). Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae; Gallus.	01-DEC-2001 (TrEMBLrel. 19, Created) 01-DEC-2001 (TrEMBLrel. 19, Last sequence update) 01-MAR-2002 (TrEMBLrel. 20, Last annotation update) Atrial myosin heacy chain.	ILT 15 H5 Q90WH5 PRELIMINARY; PRT; 891 AA. O90WH5:	1168 CTGGAGAGGCAGAGCCTGTCGGAAGAGGTGGACCGGCTGCGGACCCAGTTA 1218 :::	1108 CACAGCCAGGCCACAGCCCAGCAGCTGGTGCAGCTCCTCAGCAAGCA	1048 TGTGTCCAGCATGGGAGAGTACATGAGACGATGAAGCAAAGGCTAAGGCAGCTGGATAAG 1107 ::::::	988 AGGTATACATATGATAAATTGGGAAAGTTACAGAGAAGAATGAAGAATTGGAGGAGAACAG 1047 ::::: ::::: ::: 735 ArgValIleAlaLysLeuGluSerArgIleArgAspValGluIleGlu 750	715 ValArgThrLeuHisValArgIleGluGluValGluAlaAsnAlaLeuAlaGlyGlyLys 734
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Search completed: March 21, 2003, 12:57:58 Job time: 81.2241 secs

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-Q-(cgn2_1/USPT0_spool/US99502945/runat_14032003_101058_19100/app_query.fasta_1.10979
-Q-(cgn2_1/USPT0_spool/US99502945/runat_14032003_101058_19100/app_query.fasta_1.10979
-DB-Swissprot_40 -QFMT-fasta -SUFFIX=rsp -MINMATCH=0.1 -LOOPELT=0 -LOOPEXT=0
-UNITS=bits -START=1 -END=-1 -MATRIX=blosum62 -TRANS=humah40.cdi -LIST=45
-DOCALIGN=200 -THR_SCORE-pct -THR_MAX=100 -THR_MIN=0 -ALIGN=15 -MODE=LOCAL
-OUTFMT-pto -NORM=ext -HEARSIZE=500 -MINLEN=0 -MAXLEN=2000000000
-USER-US09502945_@CGN_1_1_113_@runat_14032003_101058_19100 -NCPU=6 -ICPU=3
-NO_XLPXY -NO_MMAP -LARGEQUERY -NEG_SCORES=0 -WALT -LONGLOG -DEV_TIMEOUT=120
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anchors multiple signaling enzymes to centrosome and the goigi apparatus.";	n of a novel giant scaffolding protein, CG-NAP, the	Takahashi M. Shibata H. Shimakawa M. Mivamoto M. Mukai H. Ono Y.:	MADIT (MARIA CONTROL) - DETMORA - 10350000.	SEQUENCE FROM N.A. (ISOFORM 3).	[3]	18:1858-1868(1999).	protein located in the centrosome, AKAP450.";	cour encoding an A-kinase	WITCZAK C., Skaalnegg B.S., Keryer G., Bornens M., Tasken K.,		SEQUENCE FROM N.A. (ISOFORM 2), AND VARIANT GLN-1347 INS.	_	J. Neurosci. 18:2017-2027(1998).	ND1 T.	interacts with specific splice variants of NMDA receptor subunit	"Yotiao, a novel protein of neuromuscular junction and brain that	Lin J.W., Wyszynski M., Madhavan R., Sealock R., Kim J.U., Sheng M.;	MEDLINE=98151389; PubMed=9482789;	rain;	SEQUENCE FROM N.A. (ISOFORM 4).	[1]		Catarrhini; Hominidae;	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;	Homo sapiens (Human).	AKAP9 OR AKAP450 OR AKAP350 OR KIAA0803.		on protein) (Yotiao protein) (Cent	350 kDa) (AKAP 350) (hgAKAP 350) (AKAP 120 l	ന	a	(Rel. 40, Last			UQQ4; Q9UQH3; Q9Y6Y2; 0148		RESULT 1 AKAO_HUMAN

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"prediction of the coding sequences of unidentified human genes.
The complete sequences of 100 new cDNA clones from brain which co for large proteins in vitro.";
DNA Res. 5:277-286(1998).
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MEDLINE=99115654; PubMed=9915845;
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Submitted (AUG-1998) to
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CAUTION: REF.9 SEQUENCE DIFFERS FROM THAT SHE FRAMESHIFTS IN POSITIONS 29, 1653, 1699 AND 1
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CAGTGTGACCAGTTGAGG ::::::: GlnalaGluLysValArg	NAAAACCAAGGCTTTAATC ::: LysLeuGluValGlnCys	ATATCTGAGGAAGCCAATTTTGAAAAAACCAAGGCTTTAATCCAGTGTGACCAGTTG ::: ::: :::	376 A: 2009 G:	DÞ.
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AGACCATCGAAAGACTGGTT 2 ::: PheGluArgGlnIle 1	PACTAATGTTCATATGCAG ::: PASPGluLySThrLeu	AAGCTGTTCTTTCCCAAACCCATACTAATGTTCATATGC 	208 G/ 1 1933 G	ду
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	Saccharomyces cerevisiae (Baker's yeast). Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes; Saccharomycetales; Saccharomycetaceae; Saccharomyces. NCBI_TaxID=4932;	Eukai Sacci NCBI	2000	
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1152	AGCTCCTCAGCAA	1093	Qy	
2361	MetSerAspGlnGluCysValLysArgAsnArgGluGluGluIle	2347	ДЬ	
1092	*TCCAGCATGGGAGAGTACATGAGACGATGAAGCAAAGGCT	1045	Qу	
2346	::: :: LysValIleGluGluLysAsnGluLeuIleArgAspLeuGluThrGlnIleGluCysLeu	2327	рь	
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2246	PheArgGluGluLeuGluAsnLysAsnGluGluValGlnGlnLeuHisMetGlnLeuGlu	2227	DЬ	
843	➣	790	Qy	
2226	ArgAspAlaIleAspArgLysGluLysGluIleThrAsnLeuGluGluGlnLeuGluGln	2207	Db	
789	ACTAAC	784	Qy	
2206	HisPheGlyAlaValGluAlaLysProGluLeuSerLeuGluValGlnLeuGlnAlaGlu	2187	Db	
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Submitted (MAY-1996) to the EMBL/GenBank/DDBJ databases.
-I- FUNCTION: REQUIRED FOR PROTEIN TRANSPORT FROM THE ER TO THE GOLGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Yamasaki M.; Hirata A., Ogawa Y., Yonehara T., Yoda K., Yamasaki M.; Yamasaki M.; "A cytoskeleton-related gene, usol, is required for intracellular protein transport in Saccharomyces cerevisiae."; J. Cell Biol. 113:245-260(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPLEX.

-I- SUBCELLULAR LOCATION: CYTOPLASMIC. ASSOCIATED WITH INTRACELLULAR MEMBRANES. PROBABLY PRESENT ON VESICLES OPERATIONAL BETWEEN THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (FEB-1993) to the EMBL/GenBank/DDBJ databases [3]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE OF 1-8 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kendrick K.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 782-1790 FROM N.A.
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     983
                                                        121
                                                                                                           963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hostetter M.K., Herman D.J., Bendel C.M., McClellan M.,
                                                                                                                                                   64 CAATTGAAGTTTTTGAGGAACGACTTAGCTGAATATCAGAGAACTTGTGAAGATCTT---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ER AND THE GOLGI COMPLEX.

DOMAIN: THE RODLIKE TAIL SEQUENCE IS HIGHLY REPETITIVE, COMPOSED OF AN HEPTAPEPTIDE REPEAT PATTERN CHARACTERISTIC OF ALPHA-HELICAL COLLED COLLS, MAY FORM FILAMENTOUS STRUCTURES IN THE CELL.

SIMILARITY: BELONGS TO THE VDP/USO1/YBL047C FAMILY.
LysAlaValGluGluSerLysAsnGluSerSerIleGlnLeuSerAsnLeuGlnAsnLys 1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A38455; A38455.
                                                                                                   {\tt LysLeuLysSerLeuAlaAsnAsnTyrLysAspMetGlnAlaGluAsnGluSerLeuIle}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S0002216;
                                                   -----AAAGAGCAACTAAAGCATAAAGAATTTCTTCTGGCTGCTAATACTTGTAACCGT 174
                                                                                                                                                                                                                                                                                                               Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IPR002017;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Protein transport;
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                                                                                                                                                                                                                                                                                                                                                                                                                                        1661
1772
206424 )
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256.50
43.33%
20.14%
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1796
1786
847
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GLOBULAR HEAD.

GLOBULAR HEAD.

COILED COIL (POTENTIAL).

CHARGED (HYPER-HYDROPHILIC).

DISPENSABLE FOR THE PROTEIN FUNCTION.

ASP/GLU-RICH (ACIDIC).

G -> E (IN REF. 2).

E -> K (IN REF. 2).

V -> I (IN REF. 2).

I -> V (IN REF. 2).

O -> S (IN REF. 2).

I -> V (IN REF. 2).

O -> S (IN REF. 2).

I -> V (IN REF. 2).

O -> S (IN REF. 2).

I -> C (IN REF. 2).

O -> DEEDDEE (IN REF. 2).
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                                                                                                                                                                                                         (1-1790)
                                                                                                                                                                                                                                                                                    Length:
Matches:
Conservative:
Mismatches:
Indels:
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                                                                                                                                                                                                                                                            1790
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                                                                                                      982
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AAGCAGAACCAGCTTCTCCTGGAGAGGCAGAGCCTGTCGGAAGAGGTG 1197	138 CAGCTCCTCAGCAAGCAGAACCA	Qy 1:
IleThrAsnLeuSerLysAlaLysGluLysSerGluSerGluLeuSer 1334	315 GlnLeuGluLysIleThrAsnLeuSerLys	Db 1
ATGAAGCAAAGGCTAAGGCAGGTGGATAAGCACAGCCAGGCCACAGCCCAGCAGCTGGTG 1137	1078 ATGAAGCAAAGGCTAAGGCAGCT	Qy 1
::: ::::::::: ::: GlnLysGluSerGluLysIleLysGluGluLeuAspAlaLysThrThrGluLeuLysIle 1314	295	Db 1:
CAGAGAAGAATGAAGAATTGGAAGAACAGTGTGTCCAGCATGGGAGAGTACATGAGACG 1077	018	Qy 1
GCTCAACTCAGTCAAGAAAAAAGGTATACATATGATAAATTGGGAAAGTTA 1017 ::::: ::::: SerGluLeuGluAspLysLeuLysAlaSerGluAspLysAsnSerLysTyrLeuGluLeu 1294	967 GCTCAACTCAGTCAAGAAAAAAA :::::: 275 SerGluLeuGluAspLysLeuLy	Qу Db 1
LeuGlnAspGluCysAsnPheLysGluLysGluVal 1274		Db 1
TGGGCGAATC	907 AGACTAACAGAACTGCTGGGCGA	Qy
luSer	::: ::: ::: ::: AsnGluThrAsnGluAlaSerLeuLeuG	Db 1
, <u>, , , , , , , , , , , , , , , , , , </u>	221	<u> </u>
AAAGATCAGGAAATAGAAATTGAGAATAGAACTGGATGAAAGCAAACAACACTTGGAA 864	805	
AspGluLeuGluGlyGluValLysAlaMetLysSerThrSerGluGluGlnSerAsnLeu 1220	201	. Бр. 1
AAGGAGCACAGAGTTCAGAGCAAAAACTAACAGGGATCTTGAAATT 804	745 GATGAGGCAGAAAAGGAGCACAC	Qy
lu	:::::: 1181 GlnLeuAsnAspGluIleThrSe	
GAAATGCGCTATCAGCTGAATAAAACCAACATGGAGAAG 744	706 GAAATGCGCTATCAGCTGAATAI	Qy
:::::: ::: :::: ::::: LeuLysLysTyrGluGluGlnIleAlaAsnLysGluArgGlnTyrAsnGluGluIleSer 1180	:::::: ::: :: 1161	
CAAAGCCAGCTGGCTTCTCGGGAAATGGATGTCACAAAGGTGTGTGGA 705	646 CTGGAGGAAATTCAAAGCCAGCT	Qy
	143	Db 1
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GAAATAAGGAAAGGAAAGGATACATGGGATCAAAGATGTTGATCTTGTCTGAGAATATT 585	132	Db 49
	2 2	
GAAAAAGAACTTGCATCTCAGCAAGAGAAAAAGGGCCCATTGAGAAAGACATGATGAAAAAG 525		
AsnLeuLysAsnGluLeuGluThrLysLeuGluThrSerGluLysAla 1111	092 AlaAlaTyrLys	Db 1
		Qy
::: ::: :::	072	<u></u>
GCTTTAATCCAGTGTGACCAGTTGAGGAAGGAGCTGGAGAGGCAG 453	397 GAAAAAACCAAGGCTTTAATCC!	Qy
TyrGluSerGlnIleSerLeuLeuLysGluLysLeuGluThrAlaThrThrAlaAsnAsp 1071		Db 1
AAGCAAGTGCTTATGAACAGGTGAAACAAGTTTTGCAAATATCTGAGGAAGCCAATTTT 396	337 GAAGCAAGTGCTTATGAACAGG	Qy
 erAspLeuGluGlnThrLysGluGluIleIleSerLysSerAspSerSerLysAspGlu 1051	032 S	Db 1
GATGACTTGATGTCTGCACTAGTTTCCGTAAGGAGCAGCTTGGCAGATACGCAGCAAAGA 336	277 GATGACTTGATGTCTGCACTAGT	Qy
		ш
CAGACCATCGAAAGACTGGTTAAAGAAAGA 276	235 AATGTTCATATGCAG	Qy
_	003	
GTTGGTGGTCTTTGTTTGAAATGTGCTCAGCATGAAGCTGTTCTTTCCCAAACCCATACT 234	175 GTTGGTGGTCTTTGTTTGAAATO	Qy

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Query Match:
DB:
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Deckert G., Warren P.V., Gaasterland T., Young W.G., Lenox A.L. Graham D.E., Overbeek R., Snead M.A., Keller M., Aujay M., Hube Feldman R.A., Short J.M., Olson G.J., Swanson R.V.;
"The complete genome of the hyperthermophilic bacterium Aquifex aeolicus.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA repair; Hydrolase; ATP-binding; Coiled coil; Complete NP_BIND 32 39 ATP (BY SIMILARITY).

DOMAIN 160 826 COILED COIL (POTENTIAL).

SEQUENCE 978 AA; 115897 MW; 9B0F2BF51ADD1151 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; AE000718; AAC07092.1; --
InterPro; IPR003439; ABC_transportr.
InterPro; IPR004592; SbcC.
InterPro; IPR002017; Spectrin.
TIGRFAMS; TIGR00618; SbcC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1352
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     modified
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last seq
16-OCT-2001 (Rel. 40, Last ann
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                                                                                                                                                                                                                                                                                                                                                                                                             No.:
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                                                                                          185
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            European Bioinformatics Institute. The by non-profit institutions as long ified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUBUNIT: Forms a complex with mrell (By similarity). SIMILARITY: BELONGS TO THE SMC FAMILY. RAD50 SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FUNCTION: Involved in DNA double-strand break repair (DSBR). The rad50/mrell complex possesses single-strand endonuclease activity and ATP-dependent double-strand-specific exonuclease activity. Rad50 provides an ATP-dependent control of mrell by unwinding and/or repositioning DNA ends into the mrell active site (By
GAGGAATCCCAATTGAAGTTTTTGAGGAACGACTTAGCTGAATATCAGAGAACTTGTGAA 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    similarity)
                                                                                    GluAlaLeuLysLysGluTyrGluLeuLeuLysAspTyrThrProThrLysLysGluVal 204
                                                                                                                                             GAGAAGCTAAAACTTACTTATGAG--
                                                                                                                                                                                                                                                                                                                                                                                                                                        Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GluLysLeuLysAsnGluIle 1358
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255.50
42.16%
21.93%
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Last annotation update)
rand break repair rad50
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                                                                                                                                                                                                   (1-978)
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Matches:
Conservative:
Mismatches:
Indels:
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|-GluArgLysAsnAlaGluGluGlnLeu 1351
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Huber
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CHAIN SUBUNIT: (MIC), 2 ALKALI LIGHT CHAIN SUBUNITS (MLC) AND 2

CHAIN SUBUNITS (MIC), 2 ALKALI LIGHT CHAIN SUBUNITS (MLC) AND 2

REGULATORY LIGHT CHAIN SUBUNITS (MLC-2).

COMAIN: THE RODLIKE TAIL SEQUENCE IS HIGHLY REPETITIVE, SHOWING CYCLES OF A 28-RESIDUE REPEAT PATTERN COMPOSED OF 4 HEPTAPEPTIDES, CHARACTERISTIC FOR ALPHA-HELICAL COLLED COILS.

CHARACTERISTIC FOR ALPHA-HELICAL COLLED COILS.

CHARACTERISTIC CONTAINS 1 MYOSIN-LIKE GLOBULAR HEAD DOMAIN.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the El the European Bioinformatics Institute. There are no rest
                                                                                                                                                                                                                                                                                                                                                                Adelstein R.S.;
"Cloning of the cDNA encoding the myosin heavy chain cellular myosin.";
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MEDLINE-90046668; PubMed-2813355;
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                                                                                                                                                                                                                                                                                                                c. Natl. Acad. Sci. U.S.A. 86:7726-7730(1989).
FUNCTION: CELLULAR MYOSIN APPEARS TO PLAY A ROLE IN CYTOKINESIS
CELL SHAPE, AND SPECIALIZED FUNCTIONS SUCH AS SECRETION AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCCAGTTACCCAGCATGCCACAATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GlnAlaLysLeuHisLysAlaGlnThrGluLeuGluLeuLeuLysGluLysIleArgGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CHICK
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GluGluSerLeuLysGluGluIleAsnTyrIleAsnSerLysLeuGlnGluIleGluGlu
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HisLysLeuAsnLysTyrArgLysAlaLeuGluAspArgGlnLysGlnLysGluGluAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CACCAACTGCACCTCACCAGATCTGAAATAGCTCAACTCAAGTCAAGAAAAAAGGTATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LysGluArgIleLysLysLeuGluGluLeuArgIleGluLys-----GluLysLeuGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGGCAGCCCTGGCCAGAGAGGAGTGCCTGAGACTAACAGAACTGCTGGGCGAATCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LysSerArgLeuValLysGluPheLysGluLeuTyrArgValGluArgLeuGluAspTyr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LysGluLysLysLeuArgLysHisPheGluGluLeuSerSerArgLysSerLysLeuGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Rel. 13, Created)
(Rel. 13, Last sequence update)
(Rel. 40, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
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                                            (See http://www.isb-sib.ch/announce/
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InterPro; IPR00409; Myosin_N
InterPro; IPR002928; Myosin_N
InterPro; IPR001609; Myosin_N
InterPro; IPR001609; Myosin_head; I
Pfam; PF00063; Myosin_head; I
Pfam; PF000612; IQ; 1
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SMART; SM00242; MYSC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pfam; PF02736; Myosin_N; PRINTS; PR00193; MYOSINH
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PIR; A33977; A33977.
HSSP; P10587; 1BR2.
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                                                                                                                                                                                                                                                                                                                                                                                                                       103
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AAAGAACTTGCATCTCAGCAAGAGAAAAGGGCCCATTGAGAAAGACATGATGAAAAAGGAA
                                                          TGTGACCAGTTGAGGAAGGAG-----
                                                                                      ValThrValLeuLysLysThrLeuGluAspGluAlaLysThrHisGluAlaGlnIleGln
                                                                                                                   AAACAAGTTTTGCAAATATCTGAGGAAGCCAATTTTGAAAAAACCAAGGCTTTAATCCAG
                                                                                                                                                 GluAspThrLeuAspSerThrAlaAlaGlnGlnGluLeuArgSerLysArgGluGlnGlu
                                                                                                                                                                                GCAGATACG----
                                                                                                                                                                                                             LysAlaGluLysGlnLysArgAspLeuGlyGluGluLeuGluAlaLeuLysThrGluLeu
                                                                                                                                                                                                                                                                      LeuGluSerGlnIleThrGluLeuGlnGluAsp LeuGluSerGluArgAlaSerArgAsn
                                                                                                                                                                                                                                                                                                     CATGAAGCTGTTCTTTCCCAAACCCATACTAATGTTCATATGCAGACCATCGAAAGA---
                                                                                                                                                                                                                                                                                                                                  LeuAlaArgValGluGluGluAlaAlaGlnLysAsnMetAlaLeuLysLysIleArgGlu
                                                                                                                                                                                                                                                                                                                                                                                                                       AGAACTTGTGAAGATCTTAAAGAGCAACTAAAGCATAAAGAATTTCTTCTGGCTGCT---
                                                                                                                                                                                                                                                                                                                                                                                        AlaGlnIleAlaGluLeuLysIleGlnLeuSerLysLysGluGluGluLeuGlnAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ThrArgArgLysLeuGluGlyAspSerSerAspLeuHisAspGlnIleAlaGluLeuGln
                                                                                                                                                                                                                                         ---CTGGTTAAAGAAAGAGATGACTTGATGTCTGCACTAGTTTCCGTAAGGAGCAGCTTG
                                                                                                                                                                                                                                                                                                                                                                -----AATACTTGTAACCGTGTTGGTGGTCTTTGTTTGAAATGTGCTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PF01576; Myosin_tail; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          coil;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATP-binding; Cal coil; Alkylation;
                             -GluMetArgGlnLysHisSerGlnAlaIleGluGluLeuAlaGluGlnLeuGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA;
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694
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; Myosin_N.
; Myosin_tail.
; myosin_head.
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ACTIN-BINDING
ACTIN-BINDING
ALKYLATION (SH-1) (POTENTIA
ALKYLATION (SH-2) (POTENTIA
ALKYLATION (SH-2) (POTENTIA
MW; A75C86086FD3A1A1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IQ. COILED COIL (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MYOSIN HEAD-LIKE
                                                                                                                                                                              -CAGCAAAGAGAAGCAAGTGCTTATGAACAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative: Mismatches: Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps:
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                                                         -CTGGAGAGGCAGGCGAGCTTGAA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (POTENTIAL)
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117
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159
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Gln---

529

1222

589

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01-JUN-1994
01-JUN-1994
16-OCT-2001
Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Mandibulata; Pancrustacea; Hexapoda;
Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera;
Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
NCBI_TaxID-7227;
                                                                                                                                                                                                Myosin heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGCATGGGAGAGTACATGAGACGATGAAGCAAAGGCTAAGGCAGCTGGATAAGCACAGC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CACCAACTGCACCTCACCAGATCTGAAATAGCTCAACTCAGTCAAGAAAAAAGGTATACA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GlnAspThrGlnGluLeuLeuGlnGluGluThrArgLeuLysLeuSerPheSerThrLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGCAGAGCCTGTCG------GAAGAGGTGGACCGGCTGCGGACCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     {\tt ArgGlnThrValSerAsnLeuGluLysLysGlnLysLysPheAspGlnLeuLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluLeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluCeuAlaGluC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATGATAAATTGGGAAAGTTACAGAGAAGA---AATGAAGAATTGGAGGAACAGTGTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGGAG-----TGCCTGAGACTAACAGAACTGCTGGGGCGAATCTGAG
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                                                                                                                                                                                                                        (Rel. 29, Created)
(Rel. 29, Last sequence update)
(Rel. 40, Last annotation update)
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transcript: conserved sequences in the myosin tail and different splicing in the 5' untranslated sequence.";
Proc. Natl. Acad. Sci. U.S. A. 87:6316-6320(1990).
-I- FUNCTION: NONMUSCLE MYOSIN APPEARS TO BE RESPONSIBLE FOR CELLULARIZATION. REQUIRED FOR MORPHOGENESIS AND CYTOKINESIS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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SHORT FORM; ARE PRODUCED BY ALTERNATIVE SPLICING.
-i- SIMILARITY: CONTAINS 1 MYOSIN-LIKE GLOBULAR HEAD DOMAIN.
-i- SIMILARITY: CONTAINS 1 IQ DOMAIN.
                                                                                                                                                                                                                                                                                        REACTIVE SULFHYDRYL/ACTIN-BINDING
LIGHT MEROMYOSIN (LMM).
ALPHA-HELICAL TAILPIECE (LMM).
GLOBULAR TAILPIECE.
MISSING (IN SHORT ISOFORM).
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                                                                                SerLysLysIleGlnSerGluLeuGluAspAlaThrIleGluLeuGluAlaGlnArg
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AGACTAACAGAACTGCTGGGCGAATCTGAGCACCAACTGCACCTC
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RESULT 6
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hauptmann R., Stratowa C., Stewart M.; "Cloning and sequencing of rat plectin indicates a 466-kD coblin with a three-domain structure based on a central J. Cell Bia."
                                                                                                                                                                                                                                                                 of variants with distinct first coding exons and rodless isoforms."; Genomics 42:115-125(1997).
-!- FUNCTION: INTERLINKS INTERMEDIATE FILAMENTS WITH MICROTUBULES AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Liu C.-G., Maercker C., Castanon M.J., Hauptmann "Human plectin: organization of the gene, sequency chromosome localization (8924)." proc. Natl. Acad. Sci. U.S.A. 93:4278-4283(1996).
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P30427; 0088879; 008880; 008881;

01-APR-1993 (Rel. 25, Created)

01-OCT-1996 (Rel. 34, Last sequence up

16-OCT-2001 (Rel. 40, Last annotation
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MEDLINE=91268156; PubMed=2050743;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia; CBI_TaxID=10116;
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MEDLINE=96210632; PubMed=8633055;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Plectin 1 (PLTN) (PCN).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1132
                                                                                                                                                                                                                                                                                                                                                 "Plectin transcript diversity: identification and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PARTIAL SEQUENCE FROM N.A. (ISOFORMS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rattus norvegicus (Rat).
                        SUBUNIT: HOMODIMER OR HOMOTETRAMER.
ALTERNATIVE PRODUCTS: 4 ISOFORMS; 1 (
PRODUCED BY ALTERNATIVE SPLICING.
TISSUE SPECIFICITY: WIDELY EXPRESSED
SKELETAL MUSCLE AND LOWEST IN THYMUS.
                                                                                                                                                         MICROFILAMENTS AND ANCHORS INTERMEDIATE FILAMENTS TO DESMOSOMES HEMIDESMOSOMES. MAY BE INVOLVED NOT ONLY IN THE CROSSLINKING AND STABILIZATION OF CYTOSKELETAL INTERMEDIATE FILAMENTS NETWORK, BU ALSO IN THE REGULATION OF THEIR DYNAMICS.
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N-TERMINUS

INTERACTS

HTIW

ACTIN,

C-TERMINUS

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EMBL; X59601; CAA42169.1; -. EMBL; U96274; AAC53209.1; -. EMBL; U96275; AAC53210.1; -. EMBL; U96276; AAC53211.1; -- PIR; A39638; A39638. PIR; S21876; S21876.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pfam; PF00307; CH; 2.
Pfam; PF00681; Plectin; 21.
Pfam; PF03501; S10_plectin; 1
SMART; SM00033; CH; 2.
SMART; SM00250; PLEC; 33.
SMART; SM00150; SPEC; 4.
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InterPro;
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AND THE C-TERMINIS CAN BIND INTEGRIN BELAGY.

AND THE C-TERMINIS BY CDC2; REGULATES DISSOCIATION FROM PTM: PHOSPHORYLATED BY CDC2; REGULATES DISSOCIATION FROM PTM: PHOSPHORYLATE FILAMENTS DURING MITOSIS (BY SIMILARITY; CONTAINS 2 CALPONIN-HOMOLOGY (CH) DOMAINS.

SIMILARITY: CONTAINS 3 PLECTIN REPEATS.

SIMILARITY: CONTAINS 3 SPECTRIN REPEATS.

SIMILARITY: CONTAINS 4 SPECTRIN REPEATS.

SIMILARITY: BELONGS TO THE PLAKIN OR CYTOLINKER FAMILY.

CAUTION: ISOFORM 4 IS A FRAGMENT AT THE N-TERMINUS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VIMENTIN, DESMIN, GFAP, CYTOKERATINS, LAMIN B; WHEREAS BOTH THE N-AND THE C-TERMINUS CAN BIND INTEGRIN BETA-4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q01082;
                                                                                                                                                                                                                                                                                                                                                                                                                                             coil;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                p; IPR001589; Actbind_actnin.
p; IPR001715; Calponin-like.
p; IPR0011101; Plectin_repeat.
p; IPR005326; S10_plectin.
p; IPR002017; Spectrin.
pr00307; CH; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PS00019;
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 Repeat;
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                                                                                                                                                                                                                                                                                                                                                                                                                              Alternative
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ACTININ_2;
  1473
2758
4687
                                                                                                                                                                                                                                                                                                                                                                                                                                        Structural protein; Cytoskeleton; Actin-binding;
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                                         ATGTCTGCACTAGTTTCCGTAAGGAGCAGCTTGGCAGATACGCAGCAAAGAGAAGCAAGT
                                                                                                                                     CGTGTTGGTGGTCTTTGTTTGAAATGTGCTCAGCATGAAGCTGTTCTTTCCCAAACCCAT
                                                                                                                                                                                                        GAAGATCTTAAAGAGCAACTAAAGCATAAAGAATTTCTTCTGGCTGCTAATACTTGTAAC
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                                                                                                                                                                                                                                                                                     Glu---ValGluLeuGlnSerLysArgProSerPhe------
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                                                                  ValThrValThrGlnLeuArgGluGluAlaGluArgArgAlaGlnGlnGlnAlaGluAla
                                                                                             ACTAATGTTCATATG-----CAGACCATCGAAAGACTGGTTAAAGAAAGAGATGACTTG
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GVTNILQVMRAWTSIKARGIVRETFAWCHFYWLITNEGIDHL
RQVIHILPPEIVPASIQRVRRPVAMVMPARRSSHVOTMOGP
LGCPPKRGPLPAEDPAAEERQVYRRKEREEGAAETPVVSAT
IVGTILARPGEPETPAT -> MEPSGSLFPSLVVGHVVSAT
IVGTILARPGEPETPAT -> MEPSGSLFPSLVVGHVVSLA
AVWHWRKGHRQAQDEQ (IN ISOFORM 3).
MVAGMIMPIDQIRAIYEVIFREGVMVAKKDRRERSLHPHVP
GVTNILQVMRAMTSIKARGIVRETFAWCHFYWLTNEGIDHL
RQVIHILPPEIVPASIQRVRRVENDARRRSPHVQTMOGP
LGCPPKRGFLPAEDPAREERGVYRRKEREEGAPETPVVSAT
IVGTILARPGEPETPAT -> DYSNGSGSPSPGDTLFWNLG
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01-OCT-1996 (Rel. 34, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
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| GlnGluLeuIleArgLeuArgAlaGluThrGluGlnGlyGluHisGlnArgGlnLeuLeu
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                   heavy chain
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DOMAIN
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SMART; SM0026; IQ; 3.
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ProDom; PD003376; DIL; 1.
                   CONFLICT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Titus M.A., Kuspa A., Loomis W.F.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 182-298 FROM N.A. MEDLINE=95023928; Pubmed=7937787;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Biol. Chem. 271:7120-7127(1996).
                                                                                                                                                                                                                                                                                                                                                                                       m; PF00063; myosin_head.
m; PF00063; myosin_head; 2.
m; PF00612; IQ; 6.
m; PF01843; DIL; 1.
n; PF02736; Myosin_N; 1.
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L35322; AAA79858.1;
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use by non-profit institutions as long modified and this statement is not removed entities requires a license agreement (See or send an email to licenseal.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Peterson M.D., Urioste A.S., Titus M.A.;
"Dictyostelium discoldeum myod: a member of a l
V class or a class XI unconventional myosin?";
J. Muscle Res. Cell Motil. 17:411-424(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Dictyostelium discoideum (Slime mold). Eukaryota; Mycetozoa; Dictyosteliida; Dictyostelium. NCBI_TaxID=44689;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -!- SIMILARITY: CONTAINS 1 MYOSIN-LIKE GLOBULAR
-!- SIMILARITY: CONTAINS 3 IQ DOMAINS.
-!- SIMILARITY: CONTAINS 1 DILUTE DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Discovery of myosin genes by physical mapping in proc. Natl. Acad. Sci. U.S.A. 91:9446-945U(1994).
-i-FUNCTION: MYOSIN IS A PROTEIN THAT BINDS TO ACTIVITY THAT IS ACTIVATED BY ACTIN.
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f 258 kDa ":
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with a heavy chain π
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Qy 742 Db 1332	Qy 682 Db 1312	Оу 622 Db 1292	Qy 562 Db 1280	Qy 502 Db 1262	Qy 442 Db 1244	Qy 382 Db 1224	Qy 322 Db 1204	Qy 268 Db 1184	Qy 223 Db 1164	Qy 178 Db 1144	Qy 160 Db 1124	QY 124 Db 1104	Qy 64 Db 1084	1064	ignment ed. No. ore: rcent S rcent S st Loca ery Mat :	FT CONF
2 AAGGATGAGGCAGAAAAGGAGCACAGAGAGAGTTCAGAGCAAAAACTAACAGGGATCTTGAA 801 ::: :::::: ::: ::: 2 LysSerThrIleGluGluLeuAsnLysSerIleGlyLysLeuGlnAlaGluGlnLys 1350	2 ATGGATGTCACAAAGGTGTGTGGAGAAATGCGCTATCAGCTGAATAAAACCAACATGGAG 741 ::: ::: 2 PheGluSerThrGlnValSerThrAsnValSerHisGlnLysGluLysIleThrThrLeu 1331	2 GAAAAGATTTCAGCTATTAATCAACTGGAGGAAATTCAAAGCCAGCTGGCTTCTCGGGAA 681 	2 ATGTTGATCTTGTCTCAGAATATTGCCCAACTGGAGGCCCAGGTGGAAAAGGTTACAAAG 621 ::::: ::::::::::::::::::::::	2 ATTGAGAAAGACATGATGAAAAAGGAAATAACGAAAGAAA	2 CTGGAGAGGCAGGCGAGCGAGCTTGAAAAAGAACTTGCATCTCAGCAAGAGAAAAGGGCC 501 	2 GAGGAAGCCAATTTTGAAAAAACCAAGGCTTTAATCCAGTGTGACCAGTTGAGGAAGGA	2 GATACGCAGCAAAGAGAAGCAAGTGCTTATGAACAGGTGAAACAAGTTTTGCAAATATCT 381 ::: 	B AAAGAAAGAGATGACTTGATGTCTGCACTAGTTTCCGTAAGGAGCAGCTTGGCA 321 	3 CAAACCCATACTAATGTTCATATGCAGACCATCGAA	B GGTGGTCTTTGTTTGAAATGTGCTCAGCATGAAGCTGTTCTTTCC 222 	0ATACTTGTAACCGTGTT 177 	4 GAGCAACTAAAGCATAAAGAATTTCTTCTGGCTGCT	4 CAATTGAAGTTTTTGAGGAACGACTTAGCTGAATATCAGAGAACTTGTGAAGATCTTAAA 123 	CTGGATGCATCCGAGAAGCTAAAACTTACTTA	Tres: 1.49e-06 Le 245.00 Ma larity: 37.94% Co imilarity: 21.01% Mi imilarity: 21.01% Ga	CONFLICT 550 550 N -> K (IN REF. 2). CONFLICT 865 866 HH -> QQ (IN REF. 2). SEQUENCE 2245 AA; 258478 MW; 615E5EFID1AB45BE CRC64;

"Cloned mRNA : from chick sk	쪼쪼
Jakovcic S., Rabinowitz M.;	R.
R — Kavinsky C.J., Umeda P.K., Sinha A.M., Elzinga M., Tong S.W., Zak R.,	Z Z
SEQUENCE OF 1502-1940 FROM	R
L J. Biol. Chem. 262:6478-6488(1987). N [2]	포감
of its corresponding cDNA.";	R.
T "The sequence of an embryonic myosin heavy chain gene and isolation	2 3
MOLINE MI FROM F F Culick I Bobbins I	5 5
P SEQUENCE FROM N.A.	RE
N [1]	R
X NCBI_TaxID=9031;	99
Gallus	2 2
Archosanria: Aves: Neognathae	2 2
Gallus gallus (Chicken).	3 6
MYH3.	ē.
Myosin heavy chain, fast skeletal muscle, em	DH
16-OCT-2001 (Rel. 40, Last annotation	5
Ol-FEB-1996 (Rel 33. Last sectionce	3 5
21 - TIII - 1086 (Bol O1 Crostod	3 A
MIH3_CHICK STANDARD; PRT; 1940 AA.	: H 3
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b 1534LysGluLeuLysTyrLysGlu 1540	ДD
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b 1524 AlaGlnAsnGluLeuGluArgLeuArgLys 1533	Db
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b 1471 ValThrThrGlnMetGlnGlnAsnGlnSerArgIleGluArgGluLeu 1486	DЬ
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b 1451 PhePheValAlaLysGluGlnAsnSerAsnGlnThrGlnGluSerValTyrLeuLysGlu 1470	Db
943 CTGCACCTCACCAGATCTGAAATAGCTCAACTCAGTCAAGAAAAAAAGGTATAC	Qy
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b 1411 ArgValGlnGlnSerLeuLysGlnGlnGluArgAspCysGlnGlnTyrLysAspThrIle 1430	DЬ
865 CAGGAGCAGCAGAAGGCAGCCCTGGCCAGAGAGGA	Qy
)
b 1391 SerGluIleThrIleHisSerLeuGluArqThrAsnGluThrLeuLysSerAspPheGlu 1410	Дb
859	Qγ
b 1371 ThrargGlnThrLysGluPheSerAspLeuGlnSerGlnGlnSerIleAspArgProLys 1390	Д
9 858 858	Qy
1351	뫄
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Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                US-09-502-945-1 (1-1552) x MYH3_CHICK (1-1940)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RT light meromyosin.";

R. J. Biol. Chem. 258:5196-5205(1983).

CC -!- FUNCTION: MUSCLE CONTRACTION.

CC -!- SUBUNIT: MUSCLE MYOSIN IS A HEXAMERIC PROTEIN THAT CONSISTS OF 2

CC HEAVY CHAIN SUBUNITS (MHC), 2 ALKALI LIGHT CHAIN SUBUNITS (MLC)

CC AND 2 REGULATORY LIGHT CHAIN SUBUNITS (MLC-2).

CC AND 2 REGULATORY LIGHT CHAIN SUBUNITS (MLC-2).

CC -!- SUBCELLULAR LOCATION: Thick filaments of the myofibrils.

CC C-!- SUBCELLULAR COCATION: Thick filaments of the myofibrils.

CC C-!- SUBCELLULAR COCATION: Thick filaments of the myofibriles, SHOWING

CC C-!- SUBCELLULAR COCATION: THICK FILAMENTS (SI) SHOWING

CC C-!- SUBCELLULAR COCATION: THICK FILAMENTS

CC C-!- SUBCELLULAR COCATION: THE SIDUER REPEAT PATTERN COMPOSED OF 4 HEPTAPEPTIDES,

CC C-!- MISCELLANGUS: EACH MYOSIN HEAVY CHAIN ARE SELECTIVELY

CC MEROMYOSIN (LMM) AND 1 HEAVY MEROMYOSIN (HMM). IT CAN LATER BE

CC SPLIT FURTHER INTO 2 GLOBULAR SUBFRAGMENTS (S1) AND 1 ROD-SHAPED

CC STILEBENALURM: CS.)
                                                                                                                                             CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                           MOD_RES
MOD_RES
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; V00430; CAA23712.1; -. EMBL; J02714; AAA48972.1; -. PIR; A02990; A02990.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                         PRINTS; PR00193; MYOSINHEAVY.
ProDom; PD000355; myosin_head; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF01576; Myosin_tail; 1. Pfam; PF02736; Myosin_N; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Interpro; IPR000048; IQ_region.
Interpro; IPR004009; Myosin_N.
Interpro; IPR002928; Myosin_tail.
Interpro; IPR001609; Myosin_head.
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SIMILARITY: CONTAINS 1 MYOSIN-LIKE GLOBULAR HEAD DOMAIN.
SIMILARITY: CONTAINS 1 IQ DOMAIN.
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A29320; A29320.
P13538; 2MYS.
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IQ; 2.
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T -> A (IN REF. 2).
ERA -> GRT (IN REF. 2).
MW; C34833D75B04DFF2 CRC64;
                                                                                                                                                                                                      METHYLATION (TRI-) (POTENTIAL).
ALKYLATION (SH-1).
ALKYLATION (SH-2).
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IQ.
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ATP.
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 AGAGCAAAAACTAACAGGGATCTTGAAATTAAAGATCAGGAAATAGAGAAATTGAGAATA 834
                                  AlaSerLeuGluHisGluGluGlyLysIleLeuArgValGlnLeuGluLeuAsnGlnVal 1573
                                                                         GCAGAAAAGGAGCACAGAGAG-----
                                                                                                                                                                          ---AlaIleHisGluLeuGluLysValLysLysGlnIleGluGlnGluLysSerGluLeu
                                                                                                                                                                                                               TCAGCTATTAATCAACTGGAGGAAATTCAAAGCCAGCTGGCTTCTCGGGAAATGGATGTC
                                                                                                                                                                                                                                                                                     TTGTCTCAGAATATTGCCCCAACTGGAGGCCCCAGGTGGAAAAGGTTACAAAGGAAAAGATT
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                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A. (ISOFORMS 2 AND 3), ANI
MEDLINE-96312447; PUDMed-8698233;
MCLEAN W.H.I., Pulkkinen L., Smith F.J.D.,
Bullrich F., Burgeson R.E., Amano S., Huds
McGrath J.A., McMillan J.R., Eady R.A.J.,
                      Pulkkinen I., Smith F.J.D., Shimizu H., Murata S., Y. Hachisuka H., Nishikawa T., McLean W.H.I., Ditto J. "Homozygous deletion mutations in the plectin gene (with epidermolysis bullosa simplex associated with 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PLE1_HUMAN STANDARD;
Q15149; Q15640; Q15148;
16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
  with epidermolysis bullosa
muscular dystrophy.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo
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                                                                                                                      MEDLINE=97049959;
                                                                                                                                                                                                                                            "Loss of plectin
                                                                                                                                                                                                                                                                                                                                                                                                                                    Liu C.-G., Maercker C., Castanon M.J., Hau
"Human plectin: organization of the gene,
chromosome localization (8924).";
Proc. Natl. Acad. Sci. U.S.A. 93:4278-428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=96210632; PubMed=8633055;
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                                                                                                                                                                                            s of plectin causes epidermolysis cloning and genomic organization. s Dev. 10:1724-1735(1996).
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GluLeuLeuAspAlaSerGluArgValGlnLeuLeuHisThrGlnAsnThrSerLeuIle
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       {\tt IleGluGluLeuArgAlaAlaLeuGluGlnThrGluArgSerArgLysValAlaGluGln}
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                                                                                                                      1003-GLN--ALA-1005 DEL.
59; PubMed=8894687;
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                                                                                                                                                                                                                                                                                                                                    Smith F.J.D., Rugg E.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Craniata; Vertebrata; Catarrhini; Hominidae
                                                                                                                                                                                                                                                                                                                                                                                                                                    93:4278-4283(1996).
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the gene, sequence ar
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TTTWEEN REPRESENTATION OF THE PROPERTY OF THE 
                                                                                                                                                                                                          Pfam; PF00307; CH; 2.
Pfam; PF00581; Plectin; 19.
Pfam; PF03501; S10_plectin; 1
SMART; SM00033; CH; 2.
SMART; SM00250; PLEC; 33.
SMART; SM00150; SPEC; 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; 254367; CAA91196.1; -
EMBL; U53204; AAB05427.1; -
EMBL; U633610; AAB05428.1; -
EMBL; U633609; AAB05428.1; J
EMBL; V97053; CAA65765.1; -
HSSP; Q01082; 1BKR.
                                                                                                                                                                                                                                                                                                                                                                                                         InterPro;
InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        use by non-profit instrumedified and this statement modified and this alicense
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ITISSUE SPECIFICITY: WIDELY EXPRESSED WITH HIGHEST LEVELS IN MUSCLE, HEARR, PLACENTA AND SPINAL CORD.

IDOMAIN: THE N-TERMINUS INTERACTS WITH ACTIN, THE C-TERMINUS WITH VIMENTIN, DESMIN, GFAP, CYTOKERATINS, LAMIN B; WHEREAS BOTH THE N-AND THE C-TERMINUS CAN BIND INTEGRIN BETA-4.

IPTEN PHOSPHORYLATED BY CDC2; REQUIATES DISSOCIATION FROM INTERMEDIATE FILMMENTS DURING MITOSIS (BY SIMILARITY).

INTERMEDIATE FILMMENTS DURING MITOSIS (BY SIMILARITY).

IDISEASE: DEFECTS IN PLECI ARE THE CAUSE OF EPIDERMOLYSIS BULLOSA WITH MUSCULAR DYSTROPHY (MD-EBS OR EB-MD), AN AUTOSOMAL RECESSIVE DISSOCULAR DYSTROPHY (MD-EBS OR EB-MD), AN AUTOSOMAL RECESSIVE DISCORDER CHARACTERIZED BY EPIDERMAL BLISTER FORMATION AT THE LEVEL OF THE HEMIDESMOSOME AND ASSOCIATED LATE-ONSET MUSCULAR DYSTROPHY.

ISIMILARITY: CONTAINS 1 ACTIN BINDING DOMAIN.

SIMILARITY: CONTAINS 3 PLECTIN REPEATS.

SIMILARITY: CONTAINS 4 SPECTRIN REPEATS.

SIMILARITY: BELONGS TO THE PLAKIN OR CYTOLINKER FAMILY.
                                                                                                                               PROSITE; PS00019; ACTININ_1; PROSITE; PS00020; ACTININ_2; PROSITE; PS50021; CH; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MIM;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=21090821;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    between
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ALTERNATIVE PRODUCTS: 3 ISOFORMS; 1 (SHOWN PRODUCED BY ALTERNATIVE SPLICING.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the Ebropean Bioinformatics Institute. There are no restructure by non-profit institutions as long as its content
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p; IPR001715; Calponin-like.
p; IPR001101; Plectin_repeat.
p; IPR005356; S10_plectin.
p; IPR002017; Spectrin.
                                                                                                  0021; CH; 2.
Repeat; Structural
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                                                                           n; Cytoskeleton; Actin-binding;
Epidermolysis bullosa;
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ISOFORM 2 AND ISOFORM 3).

MISSING (IN ISOFORM 3).

L >> LL (IN MD-EBS).

/FTIG=VAR 011336.

MISSING (IN MD-EBS).

/FTIG=VAR 011337.

S -> F (IN REF. 2).

N -> D (IN REF. 2).

N -> V (IN REF. 2).

I -> V (IN REF. 2).

V -> A (IN REF. 2).

V -> L (IN REF. 2).

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4 X 4 AA TANDEM REPEATS OF G-S-R-X.
PHOSPHORYLATION (BY CDC2) (BY
SIMILARITY).

MVAGMLMPRDQLRAIYEVLFREGVMVAKKDRRPRSLHPHVP
GVTNLQVMRAMASLRARGLVRETFAWCHFFWYLTNEGIAHL
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93579; 060805;
01-JUN-1994 (Rel. 29, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
15-JUN-2002 (Rel., nonmuscle type A (Cellular myosin Myosin heavy chain, nonmuscle type A (Cellular myosin heavy chain-A) (NMMHC-A).
MEDLINE=20057165; PubMed=10591208;
Dunham I., Hunt A.R., Collins J.E., Bruskiewich R., Beare D.M.,
Clamp M., Smink L.J., Ainscough R., Almeida J.P., Babbage A.K.,
Bagguley C., Bailey J., Barlow K.F., Bates K.N., Beasley O.P.,
Bird C.P., Blakey S.E., Bridgeman A.M., Buck D., Burgess J.,
Burrill W.D., Burton J., Carder C., Carter N.P., Chen Y., Clark
Clegg S.M., Cobley V.E., Cole C.G., Collier R.E., Connor R.,
Conroy D., Corby N.R., Coville G.J., Cox A.V., Davis J., Dawson E.,
Dhami P.D., Dockree C., Dodsworth S.J., Durbin R.M., Ellington A.G.,
Evans K.L., Fey J.M., Fleming K., French L., Garner A.A.,
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Mammalia; Eutheria;
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Metazoa; Chordata; C
™ +heria; Primates; (
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Catarrhini; Hominidae,
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RA Milkinson P., Bodenteich A., Hartman K., Hu X., Khan A.S., Lane L., Kardish H...;
VAKLANIS ......
MEDLINE-20428192; PubMed-luy
Seri M., Cusano M., Gangaros
Ghiggeri G.M., Ravazzolo R.,
Iolascon A., Zelante L.L., (
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Arnaout M.A., Clayton L.K., Tenen D.G.;
"Cellular myosin heavy chain in human leukocytes: isolation of "Cellular myosin heavy chain in human leukocytes: isolation of "Cellular myosin heavy chain in human leukocytes: isolation of CDNA clones, characterization of the protein, chromosomal cDNA clones, characterization during myeloid differentiation."
                                                                                                                                                                                                                                                                                                                                                                                                on different chromosomory of rc. Res. 69:530-539(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wilkinson P. Bodenteich A., Hartman R
Tilahun Y., Wright H.;
"The DNA sequence of human chromosome
Nature 402:489-495(1999).
                                                                                                                 [6]
                                                                                                                                                                                                      MEDLINE=20489856;
Lalwani A.K., Golo
                                                                                                                                                                                                                                                                               MEDLINE-90138958; PubMed-1967836; Saez C.G., Myers J.C., Shows T.B., Leinwand L.A. Saez C.G., Myers J.C., Shows T.B., Leinwand L.A. "Human nonmuscle myosin heavy chain mRNA: genera through alternative polyadenylylation."; Proc. Natl. Acad. Sci. U.S.A. 87:1164-1168(1990)
                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=91316803; PubMed=1860190;
Simons M., Wang M., McBride O.W.,
Gdula D., Adelstein R.S., Weir L.;
"Human nonmuscle myosin heavy chai
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Genew; HGNC:7579; MYH9.
MIM; 160775; -.
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MIM; 603622; -.
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EMBL; M69180; AAA61765.1; -
EMBL; M31013; AAA36349.1; -
HSSP; P10587; 1BR2.
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CEAPPING.

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CAPPING.

AND SPECIALIZED FUNCTIONS SUCH AS SECRETION AND
CHAIN SUBUNITS (MIC), 2 ALKALI LIGHT CHAIN SUBUNITS (MIC) AND 2

REGULATORY LIGHT CHAIN SUBUNITS (MIC-2).

1- DOMAIN: THE RODLIKE TAIL SEQUENCE IS HIGHLY REPETITIVE, SHOWING CYCLES OF A 28-RESIDUE REPEAT PATTERN COMPOSED OF 4 HETTAPEPTIDES, CHARACTERISTIC FOR ALPHA-HELICAL COILED COILS.

1- DISEASE: DEFECTS IN MY19 ARE THE CAUSE OF MAY-HEGGLIN ANOMALY (MHA), AN AUTOSOMAL DOMINANT MACROTHROMBOCYTOPENIA CHARACTERIZED BY THROMBOCYTOPENIA, GIANT PLATELETS AND LEUKOCYTE INCLUSIONS.

1- DISEASE: DEFECTS IN MY19 ARE THE CAUSE OF FECHTNER SYNDROME (FTNS), AN AUTOSOMAL DOMINANT MACROTHROMBOCYTOPENIA CHARACTERIZED BY THROMBOCYTOPENIA, GIANT PLATELETS AND LEUKOCYTE INCLUSIONS.

1- DISEASE: DEFECTS IN MY19 ARE THE CAUSE OF SENSORINEURAL DEAFNESS, CATARACTS AND NEPHRITIS.

1- DISEASE: DEFECTS IN MY19 ARE THE CAUSE OF SEBASTIAN SYNDROME (SBS), AN AUTOSOMAL DOMINANT MACROTHROMBOCYTOPENIA, GIANT PLATELETS AND LEUKOCYTE INCLUSIONS.

1- DISEASE: DEFECTS IN MY19 ARE THE CAUSE OF SEBASTIAN SYNDROME (SBS), AN AUTOSOMAL DOMINANT MACROTHROMBOCYTOPENIA CHARACTERIZED BY THOMBOCYTOPENIA, GIANT PLATELETS AND LEUKOCYTE INCLUSIONS.

1- DISEASE: DEFECTS IN MY19 ARE THE CAUSE OF SEBASTIAN SYNDROME (SBS), AN AUTOSOMAL DOMINANT MACROTHROMBOCYTOPENIA, GIANT PLATELETS AND LEUKOCYTE INCLUSIONS.

1- DISEASE: DEFECTS IN MY19 ARE THE CAUSE OF SEBASTIAN SYNDROME (SBS), AN AUTOSOMAL DOMINANT FORM OF NONSYNDROMIC SENSORINEURAL DEAFNESS (DFNA17) WHICH IS CHARACTERIZED BY PROGRESSIVE HEARING IMPAIRMENT AND COCHIHEROSACCHIAR DEFERBERTION
                                                                         Pfam; PF02736; Myosin_N; 1.
PRINTS; PR00193; MYOSINHEAVY.
ProDom; PD000355; myosin_head;
SMART; SM00015; IQ; 1.
SMART; SM00242; MYSC; 1.
                                                                                                                                                                      pfam; PF00063; myosin_head; 1.
pfam; PF00612; IQ; 1.
pfam; PF01576; Myosin_tail; 1.
pfam; PF02736; Myosin_N; 1.
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InterPro;
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PROSITE; PS50096; IQ; 1.
Myosin; ATP-binding; Calmodulin-binding; Actin-binding;
Coiled coil; Alkylation; Multigene family; Disease mutation;
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May-Hegglin anomaly.";

Nat. Genet. 26:106-108(2000).

-!- FUNCTION: CELLULAR MYOSIN APPEARS TO PLAY A ROLE IN CYTOKINESIS.

-!- FUNCTION: CUADE AND SPECIALIZED FUNCTIONS SUCH AS SECRETION AND
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MEDLINE-20428193; PubMed-10973260;
Kelley M.J. Jawlen W., Ortel T.L., Korczak J.F.;
Kelley M.J. Jawlen W., Ortel T.L., Korczak J.F.;
"Mutation of MYH9, encoding non-muscle myosin heavy chain A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Aliprandis E., Bizzaro N., Desnick R.J., Martignetti J.A.; "Mutations in MYH9 result in the May-Hegglin anomaly, and Fechtner and Sebastian syndromes."; Sebastian syndromes.";
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SIMILARITY: CONTAINS 1 IQ DOMAIN.
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o; IPR002017; Spectrin.
o; IPR001609; Myosin_head.
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381 1551	TGCAAATATCT hrGlnLeuGluLeuGluAspGluLeuGlnAlaThr	AGGTGAAACAAGTT :::::::: nValGluGluMetLysT	AGGTGAAACAAGTT :::::::: nValGluGluMet	52 GAACA ::: 32 GlnGl	3 15	Qy Db
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183 1478	AGCAACTAAAGCATAAAGAATTTCTTCTGGCTGCTAATACTTGTAACCGTGTTGGTGGT :: :: laGluAlaArgGluLysGlu	CATAAAGAAT GluLysGlu-	.GCAACTAAAGC ::: aGluAlaArgG	24 G 69 A	1 14	рь
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PROSITE; PS50067; KINESIN_MOTOR_DOMAIN2; 1.
Motor protein; Cell division; ATP-binding; Coiled coil; Cell cycle; Centromere.
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HSSP; P17119; 3KAR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=95196755; PubMed=7889940; Thrower D.A., Jordan M.A., Schaar B.T., Yen T.J., Wils "Mitotic Hela cells contain a CENP-E-associated minus microtubule motor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-93024922; PubMed-1406971; Yen T.J., Li G., Schaar B.T., Szilak I., Cleveland D.W.; "CENP-E is a putative kinetochore motor that accumulates mitosis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the European Bioinformatics Institute. Thuse by non-profit institutions as long modified and this statement is not removed
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Mammalia; Eutheria; Primates;
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                                                                                                                                                                                             SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    or send an email to license@isb-sib.ch).
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SUBCELLULAR LOCATION: ASSOCIATES WITH KINETOCHORES DURING
CONGRESSION, RELOCATES TO THE SPINDLE WIDZONE AT ANAPHASE,
QUANTITATIVELY DISCARDED AT THE END OF THE CELL DIVISION.
SIMILARITY: BELONGS TO THE KINESIN-LIKE PROTEIN FAMILY.
                                                                                                                                              Scores:
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(CENP-E protein).
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A Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
A Alzawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
A Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
A Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
A Kadota K., Matsuda T., Gissi C., King B., Kochiwa H.,
Kentl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
A Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
A Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
A Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
A Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
A Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
A Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,
A Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
A Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
A Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
A Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
A Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
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Ryoo Y.W., Li K., Aho S.,
"Mouse periplakin: genomic
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Eukaryota; Metazoa; (
Mammalia; Eutheria;
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"CDNA cloning, mRNA expression, and chromosomal mapping mouse periphakin genes.";
Genomics 48:242-247(1998).
-i- FUNCTION: COMPONENT OF THE CORNIFIED ENVELOPE OF KERMAY LINK THE CORNIFIED ENVELOPE TO DESMOSOMES AND IN FILAMENTS (BY SIMILARITY).
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Keratinization; Repeat;
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"Functional annotation of Nature 409:685-690(2001).
[4]
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InterPro; IPR002017; Spectrin
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Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., K
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SIMILARITY: CONTAINS 3 SPECTRIN REPEATS.
SIMILARITY: BELONGS TO THE PLAKIN OR CYTOLINKER FAMILY.
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R -> S (IN REF. 2).
GK -> EQ (IN REF. 2).
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               LeuGluProLeuArgArgLysLeu---
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01-JAN-1990 (Rel. 13, Created)
16-CCT-2001 (Rel. 40, Last sequence update)
16-CCT-2001 (Rel. 40, Last annotation update)
16-CCT-2001 (Rel. 40, Last annotation update)
Myosin heavy chain, skeletal muscle, adult.
Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MYSS_CHICK
P13538; 01:
                                                                                                   Sequence of kDa, and 22
                                                                                                                                                                                                      TISSUE=Pectoralis muscle; MEDLINE=92041769; PubMed=1939029;
                                                                                                                                                                                                                                                                                                                                                                             TISSUE-Pectoralis muscle;
MEDLINE-92041768; PubMed-1939028;
Komine Y., Maita T., Matsuda G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE-Pectoralis muscle;
MEDLINE-92041767; PubMed=1939027;
Hayashida M., Maita T., Matsuda G.;
"The primary structure of skeletal mus
Sequence of the amino-terminal 23 kDa
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
STRAIN-White leghorn; TISSUE-Pectoralis muscle;
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                                                                                                                                                                                                                                                                                                                                 "The primary structure of skeletal muscle myosin heavy Sequence of the 50 kDa fragment of subfragment-1.";
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                                                                                                                                                                            T., Miyanishi T., Matsuzono K., Tanioka Y.,
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                                                                           the 22 kDa fragment and kDa fragments."; 110:68-74(1991).
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FUNCTION: MUSCLE CONTRACTION. MYOSIN IS A PROTEIN THAT BINDS TO F-ACTIN AND HAS APPASE ACTIVITY THAT IS ACTIVATED BY F-ACTIN.

F-ACTIN AND HAS APPASE ACTIVITY THAT IS ACTIVATED BY F-ACTIN.

SUBUNIT: MUSCLE MYOSIN IS A HEXAMERIC PROTEIN THAT CONSISTS OF 2

HEAVY CHAIN SUBUNITS (MHC), 2 ALKALI LIGHT CHAIN SUBUNITS (MLC)

AND 2 REGULATORY LIGHT CHAIN SUBUNITS (MLC-2).

AND 2 REGULATORY LIGHT CHAIN SUBUNITS (MLC-2).

FORMAIN: THE RODLIKE TAIL SEQUENCE IS HIGHLY REPETITIVE, SHOWING CYCLES OF A 28-RESIDUE REPEAT PATTERN COMPOSED OF 4 HEPTAPEPTIDES, CHARACTERISTIC FOR ALPHA-HELICAL COILED COILED COILE CHARACTERISTIC FOR ALPHA-HELICAL COILED COILE COILED COILE CHARACTERISTIC FOR ALPHA-HELICAL COILED COILE CHARACTERISTIC FOR ALPHA-HELICAL COILED COILE CHARACTERISTIC FOR ALPHA-HELICAL COILED COILE COILED COILE CHARACTERISTIC FOR ALPHA-HELICAL COILED COILE COILED COILE CHARACTERISTIC FOR ALPHA-HELICAL COILED COILE COILED COILE CHARACTERISTIC FOR ALPHA-HELICAL COILED COILE CHARACTERISTIC FOR ALPHA-HELICAL COILED COILE CHARACTERISTIC FOR ALPHA-HELICAL COILED COILE
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Rayment I., Rypniewski W.R., Schr
Tomchick D.R., Benning M.M., Wink
                                                                                                                                                                <del>-</del>
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skeletal muscle myosin.
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skeletal muscle myosin
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"The primary structure of skeletal muscle myosin heavy chain:
Sequence of the rod, and the complete 1,938-residue sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Holden H.M.;
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MEDLINE=87092420; PubMed=3467365;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Three-dimensional structure
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CONTAINS
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MYOSIN-LIKE IQ DOMAIN.
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                                GLOBULAR HEAD DOMAIN
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modified entities between the Euro This SWISS-PROT entry is copyright. It is between the Swiss Institute of Bioinformation ween the Swiss Institute of Bioinformat European Bioinformatics Institute. The by non-profit institutions as long lifted and this statement is not removed titles requires a license agreement (Sec is not removed. agreement (See Bioinformatics citute. There a produced through a collaboration as its content http://www Usage and the Ьy restrictions and EMBL 18 is in no way for commercial ch/announce/ outstation on

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wyosli, Muscle protein; Coiled coil; Thick filament; Actin-binding; Myoslin; Muscle protein; Coiled coil; Thick filament; Actin-binding; KW Alp-binding; Multion; Alkylation; Phosphorylation; Acetylation; KW Calmodulin-binding; Multigene family; 3D-structure.

FI DOMAIN 1 783 812 100

FI DOMAIN 841 1938 COILED COIL (POTENTIAL).

FI DOMAIN 657 679 ACTIN-BINDING.

FI NOD_RES 157 679 ACTIN-BINDING.

FI MOD_RES 35 35 METHYLATION (MONO-).

FI MOD_RES 130 130 METHYLATION (TRI-).

FI MOD_RES 755 755 METHYLATION (SH-1).

FI MOD_RES 757 697 ALKYLATION (SH-1).

FI MOD_RES 757 597 ALKYLATION (SH-2).

FI CONFLICT 980 980 L-> F (IN REF. 1).

FO CONFLICT 1343 1343 S-> A (IN REF. 5).

FO CONFLICT 1863 1863 I-> V (IN REF. 5).

FO CONFLICT 1863 1863 I-> V (IN REF. 10).

FO CONFLICT 1820 1931 IHG -> FH (IN REF. 10).
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EMBL; M16557; AAA48970.1; -.
PIR; PX0050; PX0051.
PIR; A26821; A26821.
PIR; S02082; S02082.
PIR; S04501; S04501.
PIR; S04501; S04501.
PIR; S05515; S05515.
PIB; S05515; S05515.
PIB; S07515; S05515.
PIB; S07515; PR000048; IQ_region.
InterPro; IPR000409; Myosin_N.
InterPro; IPR001409; Myosin_tail.
InterPro; IPR001609; Myosin_head.
Pfam; PF00063; Myosin_head; 1.
Pfam; PF00576; Myosin_tail; 1.
Pfam; PF01576; Myosin_tail; 1.
Pfam; PF01576; Myosin_tail; 1.
Pfam; PF02736; Myosin_tail; 1.
ProDom; PD000355; Myosin_head; 1.
SMART; SM00015; IQ; 1.
SMART; SM00015; IQ; 1.
SMART; SM00015; IQ; 1.
                                                                                                                                                                              1013
                                                   1033 ValAspAspLeuGluGlySerLeuGluGlnGluLysLysLeuArgMetAspLeuGluArg 1052
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                                                                                                                                                                                                                                                                                           993
                                                                                                                     109
166 TGTAACCGTGTTGGTGGTCTTTGTTTGAAATGTGCTCAGCATGAAGCTGTTCTTTCCCAA 225
                                                                                                                                                                                                                                 49
                                                                                                                                                                                                                                                                                                                                           25 AAACTTACTTATGAGGAAAAGTGT-----
                                                                                                                                                                  GAAATTGAGGAATCCCAATTGAAGTTTTTGAGGAACGACTTAGCTGAATATCAGAGAACT 108
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GInValGluGluAspLysValAsnThrLeuThrLysAlaLysThrLysLeuGluGlnGln 1032
                                                                                                                                                                                                                                                                                        LysLeuThrLysGluLysLysAlaLeuGlnGluAlaHisGlnGlnThrLeuAspAspLeu 1012
                                                                                                            TGTGAAGATCTTAAAGAGCAACTA---AAGCATAAAGAATTTCTTCTGGCTGCTAATACT 165
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Conservative:
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1131	AGACGATGAAGCAAAGGCTAAGGCAGCTGGATAAGCACAGCCAGGCC	Qy
1392	ThrGluGluLeuGluGluAlaLys	ф
1071		Qy
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912 1345	1 CAGCAGAAGGCAGCCCTGGCCAGAGAGAGGAGTGCCTGAGACTA :::	Оу
870 1325	AGAATAGAACTGGATGAAAGCAAACAACACTTGGAACAGGAG 	Дy
828 1305	CTACAGGGATCTTGAAATTAAAGATCAGGAAATAGAGAAATTG ::: ::: hrGlyGluTyrSerArgGlnAlaGluGluLysAspAlaLeuIleSerGlnLeuSerArg	Оу
783 1285	AAAAG:: :::: lnargMetIleAsnAspLeuAsnThrGlnArgAlaArgLeuGlnThrGlu	Qу Дъ
744 1265	85 GATGTCACAAAGGTGTGTGGAGAAATGCGCTATCAGCTGAATAAAACCAACATGGAGAAG :::::: :::	Db Qq
684 1245	CGGGAAATG ::: rLysAlaLysAla	Qy Db
633 1225	GATTTCA SSerGlu	Qy Db
573 1205	520 AAAAAGGAAATAACGAAAGAAAGGGAGTACATGGGATCAAAGATGTTGATCTTG :::	Qy
519 1185	AAAGGGCCATTGAGAAAGACATGATG :: ::: ::: rgArgAspLeuGluGluAlaThrLeu	Qу
468 1165	<pre>GCAGGCGGAGCGACTTGAA iGCAGGCGGAGCGACTTGAA ::: ::: </pre>	Db Qy
444 1145	94 TTTGAAAAAACCAAGGCTTTAATCCAGTGTGACCAGTTGAGGAAGGAGCTG :::	Ф
393 1125	46 GCTTATGAACAGGTGAAACAAGTTTTGCAAATATCTGAGGAAGCCAAT :::::::: ::: :::::::::::	Qу Оъ
345 1105	86 ATGTCTGCACTAGTTTCCGTAAGGAGCAGCTTGGCAGATACGCAGCAAAGAGAAGCAAGT :::	Дy
1088	TRIUCABACCAICABAGACTIGGTTAAABAAAAGATIGACTIG :::::: GlnGlnLeuAspGluLysLeuLysLysLysAspPheGlu	D 45
0	53 AlaLysArgLysLeuGluGlyAspLeuLysLeuAlaHisAspSerIleMetAspLeu	дb

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RESULT 14
MYHA_HUMAN
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CAPPING:

TSUBUNIT: MYOSIN IS A HEXAMERIC PROTEIN THAT CONSISTS OF 2 HEAVY
CHAIN SUBUNITS (MHC), 2 ALKALI LIGHT CHAIN SUBUNITS (MLC) AND 2
REGULATORY LIGHT CHAIN SUBUNITS (MLC-2).

POMALN: THE RODLIKE TAIL SEQUENCE IS HIGHLY REPETITIVE, SHOWING
CYCLES OF A 28 RESIDUE REPEAT PATTERN COMPOSED OF 4 HEPTAPEPTIDES,
CHARACTERISTIC FOR ALPHA-HELICAL COILED COILS.

-I- SIMILARITY: CONTAINS 1 MYOSIN-LIKE GLOBULAR HEAD DOMAIN.

-I- SIMILARITY: CONTAINS 1 10 DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-FEB-1996 (
16-OCT-2001 (
Myosin heavy
                                                                                                                                     PIR;
                                                                                                                                               EMBL;
                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entropean Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content modified and this statement is not removed. Usage by and
                                                                                                                                                                                                                                                                                                                                                                                         Circ.
                                                                                                                                                                                                                                                                                                                                                                                                            Simons M., Wang M., McBride O.W., Kawamot
Gdula D., Adelstein R.S., Weir L.;
"Human nonmuscle myosin heavy chains are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=96025307; PubMed=7499478;
Phillips C.L., Yamakawa K., Adelstein R.S.;
PCloning of the cDNA encoding human nonmuscle myosin heavy ch
analysis of human tissues with isoform-specific antibodies.";
J. Muscle Res. Cell Motil. 16:379-389(1995).
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                                                                                                                                                                      or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa;
Mammalia; Eutheria;
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                                            InterPro;
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                                                                                                                                                                                  entities requires a
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 type B) (Nonmuscle myosin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens (Human).
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                                                                                                                                                                                                                                                                                                                                                                                                  different
                                                                                                                                                                                                                                                                                                                                                              tilfferent characters; res. 69:530-539(1991).
FUNCTION: CELLULAR MYOSIN APPEARS TO FUNCTIONS
                                                                                                                                    ; M69181; AAA99177.1;
B61231; B61231.
PF00063;
PF00612;
PF01576;
PF02736;
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                                                                                                                           P10587;
                                                                                                              HGNC:7568; MYH10
                                         ; IPR000048; IQ_region.
; IPR004009; Myosin_N.
; IPR002928; Myosin_tail.
; IPR002017; Spectrin.
; IPR001609; myosin_head.
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yy Chain, nonmuscle type B (Cellular myosin heavy chain, myosin heavy chain, myosin heavy chain.B) (NMMHC-B).
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                                myosin_head;
                      ĮQ;
           Myosin_tail; 1.
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Primates;
                                                                                                                                                                                 license agreement (See http://www.isb-sib.ch/announce/
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Best Local Similarity:
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SMART; SM00242; MYSC;
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1038 AspLeuGluGluArgLeuLysLysGluGluLysThrArgGlnGluLeuGluLysAlaLys
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GlnValLysAlaGluSerGluHisLys---
                                         CAGAATATTGCCCCAACTGGAGGCCCCAGGTGGAAAAGGTTACAAAGGAAAAGATTTCAGCT
                                                                                                                                                                                                                            GAGCGACTTGAAAAAGAACTTGCATCTCAGCAAGAGAAAAGGGGCCATTGAGAAAGACATG
                                                                                                                                                                                                                                                                          MetargGlnargHisalaThralaLeuGluGluLeuSerGluGlnLeuGlu---Glnala
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ALKYLATION (SH-1) (POTENTIAL).
ALKYLATION (SH-2) (POTENTIAL).
ALKYLATION (SH-2) (POTENTIAL).
M; B2BB87FF35EA124F CRC64;
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DT 011

DT 115

DT 15

DT 15
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01-FEB-1996 (Rel. 3
15-JUL-1998 (Rel. 3
15-JUL-1998 (Rel. 3
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MEDILINE=92131068; pubMed=1775173;

Li B., Chandrashekar R., Alvarez R.M., Liftis F., Weil G.

"Identification of paramyosin as a potential protective a

against Brugia malayi infection in jirds.";

Mol. Biochem. Parasitol. 49:315-324(1991).

-i- FUNCTION: PARAMYOSIN IS A MAJOR STRUCTURAL COMPONENT

MANY THICK FILAMENTS ISOLATED FROM INVERTEBRATE MUSCI
                                                                                                      SEQUENCE OF 180-263
MEDLINE=92131068; Pu
Li B., Chandrasheka
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Submitted
                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -!- SUBUNIT: HOMODIMER (BY SIMILARITY).
-!- SUBCELLULAR LOCATION: Thick filaments of the myofibrils
-!- SIMILARITY: HIGH, TO MYOSIN HEAVY CHAINS.
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                           GluAlaArgArgArgLeuGluAspAlaGluArgGluArgSerGlnLeuGlnAlaGlnLeu
                                                          CAAGTTTTGCAAATATCTGAGGAAGCCAATTTTGAAAAAACCAAGGCTTTAATCCAGTGT
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1146	AGGCTAAGGCAGGTGGATAAGCACAGCCAGGCCACAGCCCAGCAGCTGGTGCAGCTCCTC	1087	οy
596	::: ::: ::: ::: ::: ::: ::: ::: :::	580	Db
1086	AATGAAGAATTGGAGGAACAGTGTGTCCCAGCATGGGAGAGTACATGAGACGATGAAGCAA	1027	φ V
579	::: MetThrValAspAsnLeuAsnArgAlaAsnIleGluAlaGlnLysThrIleLysLysGln	560	Db
1026	TATACATATGATAAATTGGGGAAAGTTACAGAGAAGA	991	Qy
559	:::::: :::::: LysAlaGluIleSerArgLeuLysLy	541	DЬ
990	ACCAGATCTGAAATAGCTCAACTCAGTCAA	952	Qy
540	GlnPheGluIleAspArgLeuThrAlaAlaLeuAlaAspAlaGluAlaArgMet	523	DЬ
951	GAGTGCCTGAGACTAACAGAACTGCTGGGCGAATCTGAGCACCAACTGCACCTC	898	Q
522	GluA	505	Db
897		841	Qy
504	AspAlaGluAsnArgAlaGlnAı	485	рЬ
840		811	Qy
484	LeuAlaGlyGluIleArgGluLeuGlnThrAlaLeuLysGluSerGluAlaAla	465	Дb
810	GAAATTAAA	799	Qy
464	LysGluAlaLeuAlaAspAlaAsnArgLysLeuHisGluLeuAspLeuGluAsnAl	445	ДЬ
798	9GAGTTCAGAGCAAAAACTAACAGGGATCTT	769	Qy
444	${\tt GluGlnLysGluAlaLeuAlaArgGluAsnLysLysLeuGlnAspAspLeuHisGluAla}$	425	рb
768	8	761	Qy
424	GluAlaArgAlaAlaLeuAlaGluLeuGlnLysLeuLysAsnLeuTyrGluLysAl	405	Дb
768	GAGCACAGA	760	Qy
404	ValAsnGluLeuLysVa	385	рь
759		700	Qy
384	AlaLys	36	Db
699	GAGGAAATTCAAAGCCAGCTGGCTTCTCGGGAAATGGATGTCACA	649	Qy
364		345	Db
648	CAACTGGAGGCCCAGGTGGAAAAGGTTACAAAGGAAAAGATTTCAGCTATTAATCAACTG	58	Qy
344	6 LeuGlnLysGlnAlaGluTyrGluGluGlnIleGluIleMetLeuGlnLysIleSer	32	Вρ
588	GAAAG	52	Qy
Ν	Lys	0	рь
528	-	50	Qγ
305	~	28	DЪ
0	AGCAAGAGAAAAGGGCCATTGAG	8	Qy
285	6 HisGlnValGlnLeuGluLeuAspSerValArgThrAlaLeuAspGluGluSerAlaAla	26	DЬ

673	illeL	Дb
1239	1180 AGCCTGTCGGAAGAGGTGGACCCGGCTGCGGACCCAGTTACCCCAGCATGCCCACAATCTGAT 1239	Qy
654	635 AlaGluIleAspLeuGluGluAlaAsnGlyArgIleThrAspLeuValSerValAsnAsn 654	Дb
1179	1156 AACCAGCTTCTCCTGGAGAGGCAG 1179	Qy
634	615 SerAlaGluLeuGluGluCysLysValAlaLeuAspAsnAlaIleArgAlaArgLysGln 634	ДĎ

Search completed: March 21, 2003, 12:46:23 Job time : 55.8271 secs

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Result
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ALIGNMENTS

interaptin - slime mold (Dictyostelium discoideum)
c;Species: Dictyostelium discoideum)
c;Species: Dictyostelium discoideum
C;Date: 20-Sep-1999 #sequence_revision 20-Sep-1999
C;Accession: T14867

20-Sep-1999 #text_change 11-May-2000

RESULT

Percent Similarity:
Best Local Similarity:
Query Match: Ъ Ş Дb Ş US-09-502-945-1 (1-1552) x T14867 A;Cross-references: EMBL:AF057019; NID:g3549260; PID:g3549261; PIDN:AAC34582.1 C;Genetics: A; Reference number: Z18248; MUID: 98365468; PMID: 9700162 A; Accession: T14867 Score: Alignment Scores: Pred. No.: A; Molecule type: DI A; Residues: 1-1738 R;Rivero, F.J.; Kuspa, A.; Brokamp, R.; Matzner, M.; Noegel, A.A. J. Cell Biol. 142, 735–750, 1998 A; Introns: A;Gene: A; Status: preliminary; translated A;Title: Interaptin, an actin-binding protein of the alpha-actinin superfamily in Dic 844 $864 \hspace{0.1cm} \textbf{GlnLeuGlnGlnGluTyrAspGlnLeuAsnGluThrAsnGlnSerIleGluAsnGlnLeu} \\$ 13 abpb AsnGluLysAsnGlnLysAspHisGlnAspGlnLeuGluLeuLeuGluLysGlnLeuLys TTTTTGAGGAACGACTTAGCTGAATATCAGAGAACTTGTGAAGATCTTAAAGAGCAACTA 132 173/2; 1680/1 DNA <RIV> 8.96e-10 272.50 42.16% 20.78% 9.97% (1-1738) from GB/EMBL/DDBJ Length:
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                                                                            CAAAGAGAAGCAAGTGCTTATGAACAGGTGAAACAAGTTTTGCAAATATCTGAGGAAGCCC
                          PheLysAsnAspLysAspSerGlnPheIleGlnLeuGlnAspAspGlnLysGlnGlnLeu
                                                                                                                                  GluGlnArgGlnLeuGlnSerGluValSerIleAspAsnAspLysIleLeuGluLeuGlu
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                                                                                                       AAGGCAGCCCTGGCCAGAGAGGAGTGC----CTGAGACTAACA-----
                                                                                                                                                                                                                                                                      --- AACAGGGATCTTGAAATTAAAGATCAGGAAATAGAAATTGAGAATAGAACTGGAT
                                                                                                                                                                                                                                                                                                    GlnLeu---IleGluLysAsnGluSerAspGlnLysGluGlnGlnLeuLysGlnGlnSer
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                                                    -GAACTGCTGGGCGAATCTGAGCACCAACTG
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Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               hypothetical protein H_GS541B18.1 - human (fragment)
C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Date: 01-Feb-1999 #sequence_revision 01-Feb-1999 #text_change |
C;Date: 01-Feb-1999 #sequence_revision 01-Feb-1999 #text_change |
C;Date: 01-Feb-1999 #sequence |
C;Date: 01-Feb-1999 #text_change |
R;Hinds, K.; Sutterer, C.; Becker, M.; Hawkins, M.
R;Hinds, K.; Sutterer, C.; Becker, M.; Hawkins, M.
R;Hinds, K.; Sutterer, C.; Becker, M.; Hawkins, M.
R;Hinds, K.; Sutterer, C.; Becker, M.; January 1998
A;Boccession: The Sequence of H. sapiens BAC clone GS541B18.
A;Reference number: Z14196
A;Accession: T00637
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Status: preliminary; translated from GB/EMBL/DDBJ
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A;Map position: 7q21
A;Note: Intron positions
A;Note: H_GS541B18.1
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A; Residues: 1-1922 <HIN>
A; Cross-references: EMBL
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GluGlyValIleAspGlyTyrAlaAspGluLysThrLeu----PheGluArgGlnIle
                                   GAAGCTGTTCTTTCCCAAACCCATACTAATGTTCATATGCAGACCATCGAAAGACTGGTT
                                                                                                                                                                                                                            {\tt GluThrSerSerGlnLeuGluHisAlaLysValThrGlnThrGluLeuMetArgGluSer}
                                                                                                                                                                                                                                                                                                       MetLeuAsnIleSerSerArgLeuGlnAlaAlaValGluLysLeuLeuGluAlaIleSer
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                                                                      LeuHisGluGluSerArgAlaArgGlu-----GlnLeuAlaValGluLeuSerLysAla
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40.57%
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Matches:
Conservative:
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Indels:
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29	GATAAATTGGGAAAGTTACAGAGAAGAAAT 102	1000	Qy
2	AspGlnHisValLeuPheGlyLysPheAlaGlnTleTleGlnGluLysGluValGluTle 502	483	Db
Ψ	CAACTGCACCTCACCAGATCTGAAATAGCTCAACTCAGTCAAGAAAAAAGGTATACATAT 999	940	Qy
2	LysAspAspMetGluLysLeuGlyLeuAlaIleLysGluSerAspAlaMetSerThrGln 482	463	рь
y	AGAGAGGGAGTGCCTGAGAACTAGAACTGCTGGGCGAATCTGAGCAC 939	892	Qy
2		443	Dр
	GAAAGCAAACAACACTTGGAACAGGAGCAGCAGAAGGCAGCCCTGGCC 891	844	Qy
	PheArgGluGluLeuGluAsnLysAsnGluGluValGlnGlnLeuHisMetGlnLeuGlu 442	423	ДЬ
ω	AGGGATCTTGAAATTAAAGATCAGGAAATAGAGAAATTGAGAATAGAACTGGAT 843	790	Qy
2	LysGluIleThrAsnL	403	DЬ
9	789	784	Qy
N	HisPheGlyAlaValGluAlaLysProGluLeuSerLeuGluValGlnLeuGlnAlaGlu 402	383	DЬ
3	783	783	Qy
2	GluLeuGluGlnAlaLeuLeuValSerAlaAspThrPheGlnLysValGluAspArgLys 382	363	Ъ
ω	783	783	Qy
2	GlnArgAspIleGlnGluArgAsnGluGluIleGluLysLeuGluPheArgValArg 362	344	Db
3		724	Qy
ω	AsnHisLeuLysGluLysThrAspLysCysSerGluLeuLeuLeuSerLysGluGlnLeu 343	324	дь
3	TCTCGGGAAATGGATGTCACAAAGGTGTGTGGAGAAATGCGCTATCAGCTG 723	673	Qy
ω	ValProArgPheGlnProIleSerGluHisGlnThrArgGluValGluGlnLeuAla 323	305	DЬ
8		613	Qy
4	=	285	Db
	ATCTTGTCTCAGAATATTGCCCAACTGGAGGCCCAGGTGGAAAAG 612	568	Qy
	AlaLeuGluLysGlnLeuGluLysMetArgLysPheLeuAspGluGlnAlaIleAspArg 284	265	DЪ
7	}	517	Qy
4		245	DЪ
6		487	Qy
4	Se	225	DЬ
6	AAGGAGCTGGAGAGGCAGGCGAGCGACTTGAAAAAGAACTTGCATCTCAG 486	436	Qy
44	::: ::: ::: ::: :::	205	DЬ
u	ATATCTGAGGAAGCCAATTTTTGAAAAAACCAAGGCTTTAATCCAGTGTGACCAGTTGAGG 435	376	Qy
42-	GlnLysGluAlaMetLysAlaGluAlaGlyProValGluGlnGlnLeuLeuGln 204	187	Db
Gi	GAAGCAAGTGCTTATGAACAGGTGAAACAAGTTTTGCAA 375	337	Qy
6	LeuGlnGluLeuGluAlaGluGlnGlnGlnIleGlnGluGluArgGluLeuLeuSerArg 186	167	뫄
60		310	Qy
	::: :::	147	Db :
b	AAAGAAAGAGATGACTTGATGTCTGCACTAGTTTCCGTAAGG 309	268	Qy

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RESULT 3
S67593
S67593
transport protein USO1 - yeast (Saccharomyces cerevisiae)
N;Alternate names: protein D2552; protein YDL058w
C;Species: Saccharomyces cerevisiae
C;Date: 12-Jul-1996 #sequence_revision 12-Jul-1996 #text_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Accession. A;Accession. A;Accession. A;Accession. A;Accession. A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-389, 'TA',392-724,'S',726-1790 <NAK>
A;Residues: 1-389, 'TA',392-724,'S',726-1790 <NAK>
A;Residues: 1-389, 'TA',392-724,'S',726-1790 <NAK>
A;Cross-references: GB:X54378; NID:g4777; PIDN:CAA38253.1; PID:g4778
A;Note: the authors translated the codon AcT for residue 768 as Ile
A;Note: the authors translated the codon AcT for residue 768 as Ile
R;Hostetter, M.K.; Herman, D.J.; Bendel, C.M.; McClellan, M.; Tao, N
submitted to the EMBL Data Library, February 1993
submitted to the EMBL Data Library, February 1993
submitted to the EMBL Data Library, February 1993
                                                                                                                                                                                                                                    A;Cross-references: SGD:S0002216; MIPS:YDL058w A;Map position: 4L C;Keywords: coiled coil; transmembrane protein E;326-342/Domain: transmembrane #status predicted E;394-410/Domain: transmembrane #status predicted E;617-633/Domain: transmembrane #status predicted
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A;Cross-references: EMBL:Z74106; NID:g1431058; PID:e253003; PID:g1431059; MIPS:YDL058
A;Experimental source: strain S288C
R;Nakajima, H.; Hirata, A.; Ogawa, Y.; Yonehara, T.; Yoda, K.; Yamasaki, M.
J. Cell Biol. 113, 245-260, 1991
A;Title: A cytoskeleton-related gene, USO1, is required for intracellular protein tra
A;Reference number: A38455; MUID:91185402; PMID:2010462
A;Accession: A38455
                                                                                                                                                                                                                                                                                                                                                                                                                           A;Molecule type: DNA
A;Residues: 71-846,'E',848-923,'K',925-1252,'I',1254-1318,'V',1320-1460,'S',1462-1580
A;Cross-references: EMBL:L03188
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US-09-502-945-1 (1-1552) x S67593 (1-1790)
                                                                     Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                   Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                      A; Gene: SGD: USO1; INT1
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{\tt SerGluLeuGluAspLysLeuLysAlaSerGluAspLysAsnSerLysTyrLeuGluLeu}
                                GCTCAACTCAGTCAAGAAAAAAGGTATACATATGATAAATTGGGAAAG-----TTA 1017
                                                                                                  AGACTAACAGAACTGCTGGGGCGAATCTGAGCACCAACTGCACCTCACCAGATCTGAAATA
                                                                                                                                                                 LysLysSerGluIleAspAlaLeuAsnLeuGlnIleLysGluLeuLysLys-----Lys
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                                                                 LysIleLysGluLeu------
                                                                                                                                {\tt AsnGluThrAsnGluAlaSerLeuLeuGluSerIleLysSerValGluSerGluThrVal}
                                                                                                                                                                                                                                   AAAGATCAGGAAATAGAGAAATTGAGAATAGAACTGGATGAAAGCAAACAACTTGGAA
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conserved hypothetical protein aq_1006 - Aquifex aeolicus C;Species: Aquifex aeolicus C;Species: Aquifex aeolicus C;Date: 08-May-1998 #sequence_revision 08-May-1998 #text_change 02-Feb-2001 C;Accession: A70387 R;Deckert, G.; Warren, P.V.; Gaasterland, T.; Young, W.G.; Lenox, A.L.; Graham, R;Deckert, G.; Warren, P.V.; Gaasterland, T.; Young, W.G.; Lenox, A.L.; Graham, R;Deckert, G.; Warren, P.V.; Gaasterland, T.; Young, W.G.; Lenox, A.L.; Graham, R;Deckert, G.; Warren, P.V.; Gaasterland, T.; Young, W.G.; Lenox, A.L.; Graham, R;Deckert, G.; Warren, P.V.; Gaasterland, T.; Young, W.G.; Lenox, A.L.; Graham, R;Deckert, G.; Warren, P.V.; Gaasterland, T.; Young, W.G.; Lenox, A.L.; Graham, R;Deckert, G.; Warren, P.V.; Gaasterland, T.; Young, W.G.; Lenox, A.L.; Graham, R;Deckert, G.; Warren, P.V.; Gaasterland, T.; Young, W.G.; Lenox, A.L.; Graham, R;Deckert, G.; Warren, P.V.; Gaasterland, T.; Young, W.G.; Lenox, A.L.; Graham, R;Deckert, G.; Warren, P.V.; Gaasterland, T.; Young, W.G.; Lenox, A.L.; Graham, R;Deckert, G.; Warren, P.V.; Gaasterland, T.; Young, W.G.; Lenox, A.L.; Graham, R;Deckert, G.; Warren, P.V.; Gaasterland, T.; Young, W.G.; Lenox, A.L.; Graham, R;Deckert, G.; Warren, P.V.; Gaasterland, T.; Young, W.G.; Lenox, A.L.; Graham, R;Deckert, G.; Warren, P.V.; Gaasterland, T.; Young, W.G.; Lenox, A.L.; Graham, R;Deckert, G.; Warren, G.; Warren, G.; Warren, G.; Warren, G.; Warren, G
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Best Local Similarity:
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A;Experimental source: strain VF5
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A; Residues: 1-978 <AQF>
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                                                                  LeuGluPheSerArgLysValAlaProTyrValProIleAlaLysArgIleGluGluIle
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                                              AGCCAGGCCACAGCCCAGCAG-----
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GluGluSerLeuLysGluGluIleAsnTyrIleAsnSerLysLeuGlnGluIleGluGlu
                                                                                     LysSerArgLeuValLysGluPheLysGluLeuTyrArgValGluArgLeuGluAspTyr
                                                                                                                                                                                  GlnAlaLysLeuHisLysAlaGlnThrGluLeuGluLeuLeuLysGluLysIleArgGlu
                                                                                                                                                                                                                                                                                                                         CACCAACTGCACCTCACCAGATCTGAAATAGCTCAACTCAGTCAAGAAAAAAGGTATACA
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                                                                                                                                    CATGGGAGAGTACATGAGCGATGAAGCAA-----AGGCTAAGGCAGCTGGATAAGCAC
                                                                                                                                                                                                                                 TATGATAAATTGGGAAAGTTACAGAGAAGAAATGAAGAATTGGAGGAACAGTGTCCAG
                                                                                                                                                                                                                                                                             HisLysLeuAsnLysTyrArgLysAlaLeuGluAspArgGlnLysGlnLysGluGluAla
                                                                                                                                                                                                                                                                                                                                                                       LysGluArgIleLysLysLeuGluGluLeuArgIleGluLys-----GluLysLeuGlu
                                                                                                                                                                                                                                                                                                                                                                                                                   AAGGCAGCCCTGGCCAGAGAGGAGTGCCTGAGACTAACAGAACTGCTGGGCGAATCTGAG
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1029 IleThrAspLeuGluGluArgLeuArgArgGluGluLysGlnArgGlnGluLeuGluLys 1048 1 CTTCTGGATGCATCCGAGAAGCTAAAACTTACTTATGAGGAAAAGTGTGAAATTGAGGAA

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A; Note: sequence extracted from NCBI backbone (NCBIP:111947)
C; Superfamily: myosin heavy chain; myosin motor domain homology
C; Keywords: actin binding; ATP; coiled coil; hydrolase; methylat
F; 84-764/Domain: myosin motor domain homology <a href="Monosoft Primaria">MOTOTO</a>
F; 174-181/Region: nucleotide-binding motif A (P-loop)
F; 552-65/Region: actin binding #status predicted
F; 637-1936/Domain: coiled coil #status predicted
F; 837-1276/Region: Sciled coil #status predicted
F; 837-1277/Region: Sciled coil #status predicted **COID**
F; 837-1277/Region: Sciled coil #status predicted **COID**
F; 837-1277/Region: Sciled **COID*
F; 837-1277/Region: Scile
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C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 19-Apr-2002 C;Date: 33-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 19-Apr-2002 C;Accession: A33977; S06116; A43422
R;Shohet, R.V.; Conti, M.A.; Kawamoto, S.; Preston, Y.A.; Brill, D.A.; Adel: Proc. Natl. Acad. Sci. U.S.A. 86, 7726-7730, 1989
A;Title: Cloning of the cDNA encoding the myosin heavy chain of a vertebrate A;Reference number: A33977; MUID:90046668; PMID:2813355
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A33977
myosin heavy chain, nonmuscle - chicken
myosin heavy chain, nonmuscle - chicken
N; Contains: myosin ATPase (EC 3.6.4.1)
                                                                                                                                                                                                                                                                                                                                                                                                F;125/Modified site: N6,N6.N6-trimethyllysine (Lys) F;180/Binding site: ATP (Lys) #status predicted F;694,704/Active site: Cys #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: mRNA
A; Residues: 1900-1959 < HOD>
A; Experimental source: brush border
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Note: this translation is not annotated in GenBank ent R;Hodge, T.P.; Cross, R.; Kendrick-Jones, J. J. Cell Biol. 118, 1085-1095, 1992
A;Title: Role of the COOH-terminal nonhelical tailpiece A;Reference number: A43422; MUID:92381096; PMID:1512291
A;Accession: A43422
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A; Residues: 1-1959 <SHO>
A; Cross-references: GB:M26510; NID:g212382; PIDN:AAA48974.1;
R; Katsuragawa, Y.; Yanagisawa, M.; Inoue, A.; Masaki, T.
Eur. J. Biochem. 184, 611-616, 1989
US-09-502-945-1
                                                                                                                       Query Match:
                                                                                                                                                         Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                F;1278-1959/Region: light meromyosin F;1937-1959/Domain: carboxyl-terminal
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A; Residues: 716-1008 <KAT>
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A;Status: not compared with conceptual translation
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                                                                   LysLysMetAspAspGlyLeuGlyCysLeuGluIleAlaGlu----
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RESULT 6
A36014
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F;1329-2017/Region: Light meromyosin
F;1329-2017/Region: Light meromyosin
F;175/Modified site: M6, N6, N6-trimethyllysine (Lys)
F;231/Binding site: ATP (Lys) #status predicted
F;745,755/Active site: Cys #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: PlyBase:PBgn0005634
C;Superfamily: myosin heavy chain; myosin motor domain homology
C;Superfamily: myosin heavy chain; myosin motor domain homology
C;Keywords: actin binding; alternative splicing; ATP; colled coil; hydrolase;
F;1-2017/Product: myosin heavy chain, form I *status predicted <MA1>
F;46-2017/Product: myosin heavy chain, form II *status predicted <MA2>
F;135-815/Domain: myosin motor domain homology <MMOT>
F;225-232/Region: nucleotide-binding motif A; (P-loop)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          myosin heavy chain, nonmuscle - fruit fly (Drosophila melanogaster)

N;Contains: myosin ATPase (EC 3.6.4.1)

C;Species: Drosophila melanogaster

C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 19-Apr-2002

C;Accession: A36014; B36014
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A;Title: Complete sequence of the Drosophila nonmuscle myosin A;Reference number: A36014; MUID:90349606; PMID:2117279
A;Accession: A36014
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Best Local Similarity:
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A; Residues: 1-2017 <KET>
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                                                  GlnLeuAlaGluIleGlnGluAspLeuGluAlaGluLysAlaAlaArgAlaLysAlaGlu
                                                                                                  CAATTGAAGTTTTTGAGGAACGACTTA-----
                                                                                                                                                IleAspGluGluSerAlaThrLysAlaThrAlaGlnLysAlaGlnArgGluLeuGluSer
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LysGluThrLysValLeuSerValSerArgGluLeuAspGluAlaPheAspLysIleGlu
                               ACCAGATCTGAAATAGCTCAACTCAGTCAAGAAAAAAGGTATACATATGATAAATTGGGA
                                                              ThrLysValLeuGluLeuGluLysLysGlnLysAsnPheAspLysIleLeuAlaGluGlu
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                                                                                                                                                                                                                                                                  {\tt IleGluAlaLeuGluArgGlnValLysGluLeuIleAlaGlnAsnAspArgLeuAspLys}
                                                                                                                                                                                                                                                                                     CTTGAAATTAAAGATCAGGAAATAGAGAAATTGAGAATAGAA -----CTGGATGAA 846
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myosin II heavy chain, non-muscle - fruit fly (Drosophila C;Species: Drosophila melanogaster C;Date: 19-Jul-1996 #sequence_revision 26-Jul-1996 #text_C;Accession: S61477; S65349
R;Mansfield, S.G.; Al-Shirawi, D.Y.; Ketchum, A.S.; Newbe J. Mol. Biol. 255, 98-109, 1996
A;Reference number: S61477; MUID:96144835; PMID:8568878
A;Accession: S61477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: flyBase:FBgn0005634
A;Introns: 10/3; 90/3; 162/3; 215/1; 255/3; 263/3; 303/3; 334/3; 1248/1; 1349/3; C;Superfamilly: myosin heavy chain; myosin motor domain homology C;Keywords: alternative splicing; ATP; nucleotide binding; P-loop F;135-855/Domain: myosin motor domain homology <MMOT>
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A;Residues: 1-1908,'NL',1911-2057 <MAW>
A;Cross-references: EMBL:U35816; NID:g1141789;
C;Genetics:
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R;Mansfield, S.G.; Al-Shirawi, D.Y.;
submitted to the EMBL Data Library, SA;Reference number: S65349
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A; Residues: 1-2057 <MAN>
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                                   GCTAATACTTGTAACCGTGTTGGTGGTCTTTGTTTGAAATGTGCTCAG------
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                                                                        AAGTTACAGAGAAATGAAGAATTGGAGGAACAGTGTGTCCAGCATGGGAGAGTACAT
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A;Title: Isolation and characterization of an avian slow myosin heavy chain gene expr A;Reference number: A59234; MUID:96291845; PMID:8663323
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C;Date: 19-May-2000 #sequence_revision 19-May-2000 #text_change 08-Sep-2000
C;Accession: A59234
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                   355 CAGGTGAAACAAGTTTTGCAAATATCTGAGGAAGCC
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                                                             ArgThrLysTyrGluThrAspAlaIleGlnArgThrGluGluLeuGluGluAlaLysLys
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                                                                                                                                              GluAlaLysAlaGluLeuGlnArgAlaLeuSerLysAlaAsnSerGluValAlaGlnTrp
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A;Cross-references: GDB:454958
A;Map position: 3q13.31-3q13.31
C;Superfamily: giantin
C;Keywords: coiled coil; Golgi apparatus;
F;3238-3254/Domain: transmembrane #status
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R;Seelig, H.P.; Schranz, P.; Schroeter, H.; Wiemann, C.;
MOl. Cell. Biol. 14, 2564-2576, 1994
A;Title: Molecular genetic analyses of a 376-kilodalton (A;Reference number: A56539; MUID:94187728; PMID:7511208
A;Accession: A56539
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A; Residues: 1-3259 <SEE>
A; Cross-references: EMBL:X75304;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;McLean, W.H.I.; Smith, F.J.D. submitted to the EMBL Data Library, A;Reference number H01385
A;Accession: G02520
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A; Residues: 1-4574 < MCL>
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                                               SerArgValLysAlaGluThrGluAlaAlaArgGluLysGlnArgAlaLeuGlnAlaLeu 1565
                                                                                                               LeuArgArgGlnValGlnAspGluSerGlnArgLysArgGlnAlaGluValGluLeuAla 1545
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                                                                                                                                                                                                                                                                                                                AlaGluAla---AlaGluArgSerArgLeuArgIleGluGluIleArgValValArg
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experimental

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A;Molecule type: mRNA
A;Residues: 1-2007 <TAK>
A;Residues: 1-2007 <TAK>
A;Cross-references: GB:M93676; NID:g212448; PIDN:AAA48988.1; PID:g212452
A;Cross-references: GB:M93676; NID:g212-221 and 632-652 and the corresponding nucleot
A;Cross-references: GB:M93676; NID:g21248; PIDN:AAA48985.1; PID:g212449
A;Residues: 1-211;222-631;653-2007 <TAZ>
A;Molecule type: mRNA
A;Residues: 1-211;222-631;653-2007 <TAZ>
A;Cross-references: GB:M93676; NID:g212448; PIDN:AAA48985.1; PID:g212449
A;Note: sequence extracted from NCBI backbone (NCBIN:112864)
C;Comment: Alternatively spliced segments 1 and 2 are found exclusively in nonmusc C;Superfamily: myosin heavy chain; myosin motor domain homology
C;Superfamily: myosin heavy chain; myosin motor domain homology
C;Keywords: actin binding; alternative splicing; ATP; coiled coil; hydrolase; meth
F;1-2007/product: myosin heavy chain-B, nonmuscle #status predicted
F;1-211,222-631,653-2007/Product: myosin heavy chain-B, nonmuscle #status predicted
F;18-802/Domain: myosin motor domain homology <MMOT>
F;178-185/Region: auternatively spliced segment 1 #status experimental
F;559-593/Region: actin binding #status predicted
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B43402
myosin heavy chain-B, neuronal - chicken
MyContains: myosin ATPase (EC 3.6.4.1)
C;Species: Gallus gallus (chicken)
C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993
C;Accession: B43402; A43402
C;Accession: B43402; A43402
C;Accession: B4360; Acsamoto, S.; Adelstein, R.S.
J. Biol. Chem. 267, 17864-17871, 1992
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A; Accession: B43402
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                                                                         GlnValLysAlaGluSerGluHisLysArgLysLeuAspAlaGlnValGlnGluLeu
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RESULT 13
A39638
plectin - rat
C:Species: Rattus norvegicus (Norway rat)
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 16-Jun-2000
C;Accession: A39638; S21876
R;Miche, G.; Becker, B.; Luber, K.; Weitzer, G.; Castanon, M.J.; Hauptmann, R.; Stratowa
J. Cell Biol. 114, 83-99, 1991
A;Title: Cloning and sequencing of rat plectin indicates a 466-kD polypeptide chain with
A;Reference number: A39638; MUID:91268156; PMID:2050743
A;Accession: A39638
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-4687 <MIC>
A;Cross-references: EMBL;X59601; NID:91292885; PIDN:CAA42169.1; PID:g1561642
C;Superfamily: plectin; alpha-actinin actin-binding domain homology; ribosomal protein SC;Keywords: cytoskeleton; transmembrane protein
C;Keywords: cytoskeleton; transmembrane protein
F;184-399/Domain: alpha-actinin actin-binding domain homology <ACT>
                                         Best Local Similarity:
Query Match:
DB:
US-09-502-945-1 (1-1552) x A39638 (1-4687)
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TCTGAGCACCAACTGCACCTCACCAGATCTGAAATAGCTCAACTCAGTCAAGAAAAA 9 :: TleSerGluAlaThrArgLeuLysThrGluAlaGluIleAlaLeuLysGluLys 1		GAAATAGAGAAATTGAGAATAGAACTGGATGAAAGCAAACAACACTTGGAACAGGAGCAG 8 ::: ::: 	::: laGlyArgPheArgGlüLeuAlaGlu		ATAAAACCAACATGGAGAAGGATGAGGCAGAAAAGGAGCACAGAGAGTTC	EeuGluAlaGluLeuAla	7	uAlaArgLeuGlnHisGluAlaThrAlaAlaThrGlnLysArgGlnGlu	AAGGTTACAAAGGAAAAGATTTCAGCTATTAATCAACTGGAGGAA 6	CAGAATATTGCCCAACTGGAGGCCCAGGTGGAA	hrAlaGlnGlnArgLeuAlaAlaGlu	AAATAACGAAAGAAAGGGAGTACATGGGATCAAAGATGTTGATCTTGTCT 5	GlyLysAlaGluGluGlnAlaValArgGlnArgGluLeuAlaGluGln	AG 5	THE TENT CONTROL OF THE TENT O				CAGATACGCAGCAAAGAAGAAGCAAGT	ValThrValThrGlnLeuArgGluGluAlaGluArgArgAlaGlnGlnGlnAlaGluAla 1	K)	AlaGluLysThrAlaGlnLeuGluArgThrLeuGlnGluGluHis 1		GluValGluLeuGlnSerLysArgProSerPhe	TCTTAAAGAGCAACTAAAGCATAAAGAATTTCTTCTGGCTGCTAATACTTGTAAC	AlaGluAlaGluArgAlaArgGlnValGlnValAlaLeuGluThrAlaGlnArgSerAla 1			CTGGATGCATCCGAGAAGCTAAAACTTACTTATGAGGAAAAGTGTGAA 5
987 1999	930 1981	873 1961	1941	1921 813	774	1905	14	1892	54	1872	1852	76	832	25	816	n V	1796	1777	45	1760	85	1740	231	1725	171	1714	111	1694	<u> </u>

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A;Status: preliminary; not compared with conceptual translation
A;Molecule type: mRNA
A;Rosidues: 1-1992 <BHA>
A;Rosidues: 1-1992 <BHA>
A;Cross references: GB:L09740; NID:g214623; PIDN:AAA49915.1; PID:g214624
A;Cross references: GB:L09740; NID:g214623; PIDN:AAA49915.1; PID:g214624
A;Cross references: CB:L09740; NID:g214623; PIDN:AAA49915.1; PID:g214624
A;Cross references: ATC cells
A;Cross references: CB:L09740; NID:g214623; PIDN:AAA49915.1; PID:g214624
A;Experimental source: XTC cells
A;Note: sequence extracted from NCBI backbone (NCBIP:128722)
R;Kelley, C.A; Oberman, F.; Yisraeli, J.K.; Adelstein, R.S.
J;Biol. Chem. 270, 1395-1401, 1995
A;Title: A Xenopus nonmuscle myosin heavy chain isoform is phosphorylated by cyclin-p34(A;Reference number: A55441; MUID:95138137; PMID:7836406
A;Reference number: A55441; MUID:95138137; PMID:7836406
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A;Recssion: A55441; MUID:95138137; PMID:7836406
C;Reywords: nucleotide
C;Superfamily: myosin heavy chain; myosin motor domain homology
C;Keywords: nucleotide binding; P-loop
F;88-787/Domain: myosin motor domain homology <MMOT>
F;178-185/Region: nucleotide-binding motif A (P-loop)
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myosin heavy chain form B, nonmuscle - African clawed frog
C;Species: Xenopus laevis (African clawed frog)
C;Date: 22-Sep-1993 #sequence_revision 18-Nov-1994 #text_change |
C;Accession: A47297; A55441
R;Bhatia-Dey, N; Adelstein, R.S.; Dawid, I.B.
RyBhatia-Dey, N; Adelstein, R.S.; Dawid, I.B.
RyCoc. Natl. Acad. Sci. U.S.A. 90, 2856-2859, 1993
A;Title: Cloning of the cDNA encoding a myosin heavy chain B iso
A;Reference number: A47297; MUID:93219383; PMID:8864900
A;Accession: A47297
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TTGAAATGTGCTCAGCATGAAGCTGTTCTTTCCCAAACCCATACTAATGTTCATATGCAG
                                        ArgGlyAspGluGluValLeuGlnLysAsnAsnThrLeuLysLeuValArgGluLeu---
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                     TATACATATGATAAATTG----
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                                                                                                   TCTGAGCACCAACTGCACCTCACCAGATCTGAAATAGCTCAACTCAGTCAAGAAAAAAGG
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Search completed: March 21, 2003, 13:04:27 Job time: 70.6459 secs

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ALIGNMENTS

RESULT 1 US-60-443-566-4443; Sequence 4443, A

Application US/60443566

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SOFTWARE: FASTSEQ for Windows Version 4.(
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LENGTH: 264

TYPE: PRT

ORGANISM: Homo sapiens

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Best Local Similarity:
                                                                                                  US-09-502-945-1 (1-1552) x US-60-443-566-4443 (1-264)
                                                                                                                                             Query Match:
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APPLICANT: CARGILL, Michele
APPLICANT: BEGOVICH, Ann
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                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/60/443,566
CURRENT FILING DATE: 2003-01-30
NUMBER OF SEQ ID NOS: 25102
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                                         TTGAGGAACGACTTAGCTGAATATCAGAGAACTTGTGAAGATCTTAAAGAGCAACTAAAG
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Matches:
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CURRENT APPLICATION NUMBER: US/60/443,566

CURRENT FILING DATE: 2003-01-30

NUMBER OF SEQ ID NOS: 25102

SOFTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 4444

LENGTH: 362

TYPE: PRT
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APPLICANT: BEGOVICH, Ann
TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH
TITLE OF INVENTION: HEUMATOID ARTHRITIS, METHODS OF DETECTION AND USES
                                                                                                                                                                                                                                                                                                                             ORGANISM: Homo sapiens
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 316
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                                                                                                        ATATCTGAGGAAGCCAATTTTGAAAAAACCAAGGCT 411
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                                                                             TGTGCTCAGCATGAAGCTGTTCTTTCCCAAACCCATACTAATGTTCATATGCAGACCATC
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Matches:
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SOFTWARE: CUSTOM
SEQ ID NO 1921
LENOTH: 172
TYPE: PRT
ORCANISM: Homo sapiens
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APPLICANT: Tang, Y, Tom et al
APPLICANT: Tang, Y, Tom et al
TITLE OF INVENTION: NOVel Nucleic Acids and Po
FILE REFERENCE: 21272-030
CURRENT APPLICATION NUMBER: US/10/276,774
CURRENT FILING DATE: 2002-11-18
PRIOR APPLICATION NUMBER: 09/560,875
PRIOR FILING DATE: 2000-04-27
PRIOR FILING DATE: 2000-02-03
PRIOR FILING DATE: 2000-02-03
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Best Local Similarity:
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                       AAGCAGAACCAGCTTCTCCTGGAGAGGCCAGAGCCTGTCGGAAGAGGTGGACCGGCTGCGG
                                              IleGlnGlnMetGluAlaGlnHisAspLysThrGluAsnGluGlnTyrLeuLeuLeuThr
                                                                     CTAAGGCAGCTGGATAAGCACAGCCAGGCCACAGCCCAGCAGCTGGTGCAGCTCCTCAGC 1149
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APPLICANT: XU, H.

APPLICANT: XU, H.

TITLE OF INVENTION: Identification of Essential Genes in Microorganisms
FILE REFERENCE: ELITRA.034A

CURRENT APPLICATION NUMBER: US/10/282,122A

CURRENT FILING DATE: 2003-02-20

PRIOR APPLICATION NUMBER: 60/191,078

PRIOR FILING DATE: 2000-03-21

PRIOR APPLICATION NUMBER: 60/206,848

PRIOR FILING DATE: 2000-05-23

PRIOR APPLICATION NUMBER: 60/20,727

PRIOR FILING DATE: 2000-05-26

PRIOR FILING DATE: 2000-05-26

PRIOR FILING DATE: 2000-09-06

PRIOR FILING DATE: 2000-09-06

PRIOR FILING DATE: 2000-09-09

PRIOR FILING DATE: 2000-09-09

PRIOR FILING DATE: 2000-09-09

PRIOR FILING DATE: 2000-09-09
                                                                                                                                                                                                                                                                                                                                                                                                                        Remaining Prior Application data removed - See File Wrapper or PALM
NUMBER OF SEQ ID NOS: 78614
SOGTWARE: PatentIn version 3.1
SEQ ID NO 61292
LENGTH: 1294
TYPE: PRT
ORGANISM: Legionella pneumophila
US-10-282-122A-61292
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US-10-282-122A-61292
; Sequence 61292, Application US/10282122A
; GENERAL INFORMATION:
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Best Local Similarity:
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PRIOR FILLING DATE: 2000-10-23
PRIOR PELICATION NUMBER: 60/253,625
PRIOR FILLING DATE: 2000-11-27
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR FILLING DATE: 2000-12-22
PRIOR PELICATION NUMBER: 60/267,636
PRIOR APPLICATION NUMBER: 60/269,308
PRIOR APPLICATION NUMBER: 60/269,308
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  172 CGTGTTGGTGGTCTTTGGAAATGTGCTCAGCATGAAGCTGTTCTTTCCCAAACCCAT 231
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                                       LysGluLeuLysGluLysIle---HisGluGlnThrThrLeuSer------Lys 720
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Malone, Cheryl
Haselbeck, Robert
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Yamamoto, Robert
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Zyskind, Judith
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	:::::: ::: ::: ::: ::: :::	TTGGAGGAACAGTGTGTCCAGCATGGGAGAGTACATGAGACGATGAAGCAAAGGCTAAGG	AGTCAAGAAAAAGGTATACATATGATAAATTGGGAAAGTTACAGAGAAGAAATGAAGAA ::: ::: ::: ValSerAlaAsnGlnGluLeuGlyLysGlnAsnGlnSer	GluIleIleGluAspGlnLysArgGlnLeuGluGluLeuLysIleLysIleGlnGluLeu	GAACTGCTGGGCGAATCTGAGCACCAACTGCACCTCACCAGATCTGAAATAGCTCAACTC	GluLysGluLysGlySerSerLeuIleSerGlnGlnSerLysGlnIleIleAlaLeuGln	CAGGAGCAGCAGAAAGGCAGCCCTGGCCAGAGAG-	LeuArgGluGlnValSerAsnLeuLysLeuGlnLeuGlnGlnLeuGlyGluValIl	AAAGATCAGGAAATAGAGAAATTGAGAATAGAACTGGATGAAAGCAAACAACACTTGGAA	GluLysArgValGluGlnSerGluLysGlyLysAlaSerAlaLysArgThrValAlaSer	GAGCACAGA		TATCAGCTGAATAAAACCAACATG-	::::::::::::::::::::::::::::::::::::::			ACAAAGGAAAAGATTTCAGCTATTAATCAACTGGAGGAAATTCAAAGCCAGCTG-		TCAAAGATGTTGATCTTGTCTCAGAATATTGCCCAACTGGAGGCCCAGGTGGAAAAGGTT	GlnThrLeuValValGluGlyLeuLysGluGluLeuGlnLysGlnLysLys-	AGGGCCATTGAGAAAGACATGATGAAAAAGGAAATAACGAAAGAAA	GlnLysGln	GAGAGGCAGGCGAGCGACTTGAA-	::: 	AAGGC	LysGluLysGluAsnLeuAlaLeuLysLysAlaAspLysGlnSerGlnHisGluLysS		ysThrL	7		TCTGCACTAGTTTCCGTAAGGAGCAGCTTGGCAGATACGCAGCAAAGAGAAGCAAGTGCT	ThrasnThrHisGlnGluGluThrIleGlnArgIleThrLysGluLysSerLeuAlaAsp	TAATGTTCA	ArgLeuGly
1	: ::: uAsnLeuHis	STGTGTCCAC	AAGGTATACA ::: nGln	uAspGlnLys	CGAATCTGA	sGlySerSe	GAAGGCAGC	nValSerAsı	AATAGAGAA	lGluGlnSe	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	::: uGluLysGlı	TAAAACCAA	sAsnGluGl	GCTTC	 	GATTTCAGC!		GATCTTGTC	;;; lValGluGl;	GAAAGACAT	-GluThrLeuGlnLeuGlnLeuLysSerLeuArgLysGlnIleGlnGlu	GGAGCGACT	: rAlaIleGl	TTTAATC	uAsnLeuAl			GAACA	::: uSerLeuAr	TTCCGTAAG	sGlnGluGl	TATGCA	
AAC	::: BAsnLysAsc	CATGGGAG?	ATATGATAA ::: Glu	sArgGlnLeu	SCACCAACTO	rLeuIleSer	CTGGCCAGA	TeuLysLeu	ATTGAGAAT!	rGluLysGl _y	GAGTTO	::: hLeuGlnIle	CATG	::::: :AsnGlnLe	CGGGAAATO	hAspSerAla	FATTAATCA!	 SerAsnThrHisGln	TCAGAATATT	::: ::: YLeuLysGlu	SATGAAAAA	::: GlnLeuGlr	rgaa	ıSerLeuThı		aLeuLysLys		GlnLeuGlr	GTGAAACAI	JLysGluLeu	SAGCAGCTTO	ThrIleGlr	SACCATCGAL	
AAGCACAGCCAGGCCACAGCCCAGCAGCTGGTG	 ThrValGlu	GTACATGAG	AAATTGGGAAAGTT::: GluLeuGlyLys	1GluGluLeu	CACCTCACC	GlnGlnSer	GAG	GlnLeuGln	GAACTGGAT	LysAlaSer	GAGTTCAGAGCAAAAACTAACAGGGATCTTGAAATT	ArgGluPhe		LysLeuThr	-GCTTCTCGGGAAATGGATGTCACAAAGGTGTGTGGAGAAATGCGC	 LeuGluSer	ACTGGAGGAA	HisGln	GCCCAACTG	: :::	GAAATAACG	 heuLysSer	1	::: SerGluLeu	CAGTGT	3AlaAspLys		ValGlnGln	- САВСАССТВА АСАВСТТТТСВА АСТАТОТОВСЯ-	::: hHisGluLeu	GCAGATACG	ArgIleThr	VAGACTGGTT	GluGluLeuGlnThrGlnLysLys
GCCACAGCC	::: ::: AspLeuLysLys	ACGATGAAG	TTACAGAGA	ıLysIleLys	AGATCTGAA	LysGlnIle	GAGTGC	 GlnLeuGly	GAAAGCAAA	AlaLysArg	ACTAACAGG	GluLysGln	GAGAAGGAT	LysGlnVal	AAGGTGTGT	:::::: LeuArgLys	ATTCAAAGC	GluGluThr	GAGGCCCAG	LysGlnLys	AAAGAAAGG	 LeuArgLys	CTTGCATCT	::: AsnGlnLev	GACCAGTTC	GlnSerGlr	GAAGCCAAT	::: LeuGluGlu	АТАТСТСАС	::::: AlaLysLys	;cagcaaag <i>f</i>	LysGluLys	AAAGAAAGA	GluLeuGlr
CAGCAGCTGO	::::: LysLysLeu	CAAAGGCTA	GAAGAAATGAAGAA ::: ::: GlnAsnGlnSer	IleGlnGlu	ATAGCTCAA	IleAlaLeu	-GAGTGCCTGAGACTAACA	GluValIle	CAACACTTG	ThrValAla	GATCTTGAA	LeuGlnGlu	GAGAAGGATGAGGCAGAAAAG	::: HisSerLeu	GGAGAAATG	::::: GluMetTyr	CAGCTG	-GluGluThrIleGluArgIle	GTGGAAAAG	Lys	GAGTACATG	GlnIleGln	AAAGAACTTGCATCTCAGCAAGAGAAA	::: LysLeuGlu	AGGAAGGAG	HisGluLys	-саасссаатттсааааасс	GlnLeuAla		 GluArgSer	GAAGCAAGT	SerLeuAla	GATGACTTG.	ThrGlnLys
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	376 ATATCTGAGGAAGCCAATTTTGAAAAAACCAAGGCTTTAATCCAGTGTGACCAGTTGAGG
	Qy 337GAAGCAAGTGCTTATGAACAGGTGAAACAAGTTTTGCAA 375
-	Qy 310 AGCAGCTTGGCAGATACGCAGCAAAGA 336 ::: ::: :::: Db 1913 LeuGlnGluLeuGluAlaGluGlnGlnGlnGlnGluGluArgGluLeuLeuSerArg 1932
	Qy 208 GAAGCTGTTCCTTTCCCAAACCCATACTAATGTTCATATGCAGACCATCGAAAGACTGGTT 267
	Qy 148 CTTCTGGCTGATACTTGTAACCGTGTTGGTGGTCTTTGTTTG
	Qy 88 TTAGCTGAATATCAGAGAACTTGTGAAGATCTTAAAGAGCCAACTAAAGCATAAAGAATTT 147 ::: ::: :: Db 1837 PheargGlnLysGlnGluAlaThrGluSerLeuLysCysGlnGluGluLeuArgGluArg 1856
	Qy 58 GAA
	Qy 1 CTTCTGGATGCATCCGAGAAGCTAAAACTTACTATGAGGAAAAGTGTGAAATTGAG 57 ::: ::: ::: ::: : Db 1797 MetLeuAsnIleSerSerArgLeuGlnAlaAlaValGluLysLeuLeuGluAlaIleSer 1816
	US-09-502-945-1 (1-1552) x US-09-724-676-68911 (1-3852)
	Alignment Scores: 2.18e-12 Length: 3852 Pered. No.: 268.50 Matches: 121 Score: 268.50 Matches: 121 Percent Similarity: 41.23% Conservative: 107 Best Local Similarity: 21.88% Mismatches: 162 Query Match: 9.83% Indels: 163 DB: 5 Gaps: 22
	RESULT 5 US-09-724-676-68911 JS-09-724-676-68911 Sequence 68911, Application US/09724676 GENERAL INFORMATION: APPLICANT: Compugen LTD TITLE OF INVENTION: Variants of alternative splicing FILE REFERENCE: 129181.4 Compugen CURRENT APPLICATION NUMBER: US/09/724,676 CURRENT FILING DATE: 2000-11-28 JNUMBER OF SEQ ID NOS: 97222 SOFTWARE: Patentin version 3.2 SEQ ID NO 68911 LENGTH: 3852 TYPE: PRT ORGANISM: Homo sapiens
	Qy 1165 CTCCTGGAGAGCCAGAGCCTGTCGGAAGAGGTGGACCGGCTGCGGACCCAGTTA 1218
	QY 1138 CAGCTCCTCAGC
	Db 1053 GluLeuAsnValGlnLeuGluGlnLeuHisGlnSerSerAsnGluLysGluGlnThrIle 1072

	AGCCTGTCGGAAGAGGTGGACCGGCTGCGGACCCAGTTA 1218	1180	Qy
2320	LeuGlnGluLeuAlaAsnIleGlyGlnLysThrSerMetAsnAlaHis	2304	Дb
1179	CCTCAGCAAGCAGAACCAGCTTCTC	1120	Qy
2303	AsnArgGluGluGluIleGluGlnLeuAsnGluValIleGluLys	2289	DЬ
1119	GTACATGAGA	1060	Qy
2288	leGluCysLeuMetSerAs	2269	рь
1059	~ છ	1045	Qy
2268	euLysIleThrThrAspAsnLysValIleGluGluLysAs	2249	. Db
1044	AGAAGA	1015	Qy
2248	:::: 	2229	Db
1014	AACTCAGTCAAGAAAAAAGGTATACATATGATAAAATTGGGA	967	Qy
2228	aMetSerThrGlnAspGlnHisValLeuPhe	2209	ДĎ
966	TGGGCGAATCTGAGCACCAACTGCACCTCACCAGATCTGA	919	Qy
2208	LeuGlnGluLeuGluGlnGluAsnLysLeuPheLysAspAspMetGluLysLeuGlyLeu	2189	Дb
918	AACAGGAGCAGCAGAAGGCAGCCCTGGCCAGAGAGGAGT	859	Qy
2188	leGlnLy	2169	Db
858	AGGAAATAGAGAAATTGAGAAATAGAACTGGAT	811	Qy
2168	.::	2149	DЪ
810	AGGGATCTTGAAATTAAAG	784	Qy
2148	euGlnAlaGluArgAspAlaIleAspArg	2129	Db
783		783	Qy
2128	euLeuGluAspArgLysHisPheGlyAla	2109	Db
783		783	Qy
2108	.nArgAspIleGlnGluArgAsnGluGluIleGluLysLeuG	2090	DЬ
783	AAACCAACATGGAGAAGGATTCAGAGGCAGCAGAGAGAGTTCAGAGCAAA	724	. Qy
2089	::: uLeuSerLysGluG	7	Db
723	TCTCGGGAAATGGATGTCACAAAGGTGTGTGGAGAAATGCGCTATCAGCTG	673	οv
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567	naaaggaaataacgaaagaaagggagtacatggga	517	Оу
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516	CAAGAGAAAAGGGCCATTGAGAAAGACATG	487	Qy
1990		1971	Db
486	AAGG#	436	Qy

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APPLICANT: Compugen LTD
TITLE OF INVENTION: Variants of alternative
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                                                                                                                                                                                                     1933
1991 PheIleGluLeuGluGlnGluLysAsnThrGluLeuMetAspLeuArgGlnGlnAsnGln 2010
                                                              1971 AspAspLeuGlnLysGlnValLysAlaLeuGluIleAspValGluGluGlnValSerArg 1990
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                                                                                                                               GluThrGluLysLeuMetLysGluLysLeuGluValGlnCysGlnAlaGluLysValArg
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                                 AAGGAGCTGGAGAGGCAGCGACCTTGAAAAAGAACTTGCATCTCAG------
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JULT 7 -09-724-676-68913 -equence 68913, Application US/09724676 	RESI US- ; S
2321 SerLeuSerGluGluAlaAspSerLeuLysHisGlnLeu 2333	Db
1180 AGCCTGTCGGAAGAGGTGGACCGGCTGCGGACCCAGTTA 1218	Qy
2304 LeuGlnGluLeuAlaAsnIleGlyGlnLysThrSerMetAsnAlaHis 2320	ДЪ
1120 ACAGCCCAGCAGCTGGTGCAGCTCCTCCAGCAGCAGAACCAGCTTCTCCTGGAGAGGCAG 1179	Qy
2289 AsnArgGluGluGluIleGluGlnLeuAsnGluValIleGluLys 2303	рь
AGTAC	Qy
2269 IleArgAspLeuGluThrGlnIleGluCysLeuMetSerAspGlnGluCysValLysArg 2288	Db
1045CAGTGTGTCCAGCAT 1059	Qy
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1015 TTACAGAGAAGA 1044	Оу
:::: SluIleAspGlnLeuAsnGluGlnValThr	ДЪ
GTC	Qy
2209 AlaIleLysGluSerAspAlaMetSerThrGlnAspGlnHisValLeuPheGlyLysPhe 2228	Ър
GAGCACCAACTGCAC	Qy
2189 LeuGlnGluLeuGluGlnGluAsnLysLeuPheLysAspAspMetGluLysLeuGlyLeu 2208	Db
859 TTGGAACAGGAGCAGCAGAAGGCAGCCCTGGCCCAGAGAGGGAGTGCCTGAGACTAACAGAA 918	Qy
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AGGAAATAGAGAAATTGAGAATAGAACTGGAT	Qy
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AGGGATCTTGAAATTAAAGA	Qy
2129 GluLeuSerLeuGluValGlnLeuGlnAlaGluArgAspAlaIleAspArgLysGluLys 2148	DЬ
783 783	Qy
2109 GluLeuGluGlnAlaLeuLeuGluAspArgLysHisPheGlyAlaValGluAlaLysPro 2128	Db
783 783	Qy
2090 GlnArgAspIleGlnGluArgAsnGluGluIleGluLysLeuGluPheArgValArg 2108	Db
724 AATAAAACCAACATGGAGAAAGGATGAGGCAGAAAAAGGAGGACACAGAGAGTTCAGAGGAAAA 783	Qy
2070 AsnHisLeuLysGluLysThrAspLysCysSerGluLeuLeuLeuSerLysGluGlnLeu 2089	DЬ
673 TCTCGGGAAATGGATGTCACAAAGGTGTGTGGAGAAATGCGCTATCAGCTG 723	Qy
2051 ValProArgPheGlnProIleSerGluHisGlnThrArgGluValGluGlnLeuAla 2069	дь
613 GTTACAAAGGAAAAGATTTCAGCTATTAATCAACTGGAGGAAATTCAAAGCCAGCTGGCT 672	Qy
2031 GluHisGluArgAspValPheGlnGlnIleGlnLysLeuGluGlnGlnLeuLysVal 2050	DЬ
568ATCTTGTCTCAGAATATTGCCCAACTGGAGGCCCAGGTGGAAAAG 612	Qy
2011 AlaLeuGluLysGlnLeuGluLysMetArgLysPheLeuAspGluGlnAlaIleAspArg 2030	DЬ
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TITLE OF INVENTION: Variants of alternative splicing
FILE REFERENCE: 129181.4 Compugen
CURRENT APPLICATION NUMBER: US/09/724,676
CURRENT FILING DATE: 2000-11-28
NUMBER OF SEQ ID NOS: 97222
SOFTWARE: Patentin version 3.2
SOFTWARE: Patentin version 3.2
SEQ ID NO 68913
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TYPE: PRT
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                                                          AlaLeuGluLysGlnLeuGluLysMetArgLysPheLeuAspGluGlnAlaIleAspArg 2030
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                                                                                                 ---ATGAAAAAGGAAATAACGAAAGAAAGGGAGTACATGGGATCAAAGATGTTG-----
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                               ValProArgPheGlnProIleSerGluHisGlnThrArgGluValGlu---GlnLeuAla
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                                                                   GTTACAAAGGAAAAGATTTCAGCTATTAATCAACTGGAGGAAATTCAAAGCCAGCTGGCT
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CURRENT FILING DATE: 2000-11-28 NUMBER OF SEQ ID NOS: 97222 SOFTWARE: PatentIn version 3.2 EQ ID NO 68912	s
APPLICANT: Compugen LTD TITLE OF INVENTION: Variants of alter FILE REFERENCE: 129181.4 Compugen CURRENT APPLICATION NUMBER: US/09/7/24	
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2304 LeuGlnGlnGluLeuAlaAsnIleGlyGlnLysThrSer	D 4
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	Percent's	Pred. No. Score:	Alignment	ÚS-09-724	TYPE:	; SEQ ID	; NUMBER ; SOFTWA	; CURREN	; FILE	TITLE	GENERAL	US-09-724				_	_	Db 2289	ОУ 1060	Db 2269	OY 1045	Db 2249	QY 1015	Db 2229	Qy 967	Db 2209	Qy 919	Db 2189	Оу 859	Db 2169	Оу 811	Db 2149	ОУ 784	Db 2129	Оу 783	Db 2109	

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ty:	676A-68913 Applic INFORMATION: NT: Compugen LyperENCE: 12918 APPLICATION N APPLICATION N APPLICATION N APPLICATION NOS: OF SEQ ID NOS: E: Patentin ve 10 68913 1: 3852 PRT PRT SM: Homo sapie 676A-68913	GAAGA GluG	::: GluLe	AGC	AGTACATGAG	pLeuGi			AGA	AGTC/	IleLysGluSerAs	TGCTGGGCGAATCTGAG	LeuG	GAGC	GlnG	GAGA	IleThrAsnLeuG	ACTAAC	LeuG	1	GlnAl	:
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2129 GluLeuSerLeuGluValGlnLeuGlnAlaGluArgAspAlaIleAspArgLysGluLys 2148
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| 1933 GlnLysGluAlaMetLysAlaGluAlaGlyProValGluGln------GlnLeuLeuGln 1950
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                                                                                                                                                                                                                                                                                           ValProArgPheGlnProIleSerGluHisGlnThrArgGluValGlu---GlnLeuAla 2069
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| GlnGluLysThrAspIleIleAspArgLeuGluGlnGluLeuLeuCysAlaSerAsnArg 1912
                                                                        GluLeuGluGlnAlaLeuLeuGluAspArgLysHisPheGlyAlaValGluAlaLysPro 2128
                                                                                                                                              GlnArgAspIleGlnGluArgAsnGlu---GluIleGluLysLeuGluPheArgValArg 2108
                                                                                                                                                                                AATAAAACCAACATGGAGAAGGATGAGGCAGAAAAGGAGCACAGAGAGTTCAGAGCAAAA 783
                                                                                                                                                                                                                                           TCTCGGGAAATGGATGTCACAAAGGTGTGTGGAGAAATG-----CGCTATCAGCTG 723
                                                                                                                                                                                                                                                                                                                       GTTACAAAGGAAAAGATTTCAGCTATTAATCAACTGGAGGAAATTCAAAGCCAGCTGGCT 672
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58	1 1809	-502-	Alignment Pred. No.: Score: Score: Percent Si Best Local Buery Matc DB:	ESULT 11 S-09-724-676 Sequence 68 GENERAL INF APPLICANT: TITLE OF I FILE REFER CURRENT AP CURRENT AP CURRENT FI NUMBER OF SOFTWARE: SEQ ID NO 6 LENGTH: 3 TYPE: PAT ORGANISM: S-09-724-676	1180 2321	2304	289	1060	N) C	0 1	1015	967 2229	2209	919	2189	859	2169	011	784 2149
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	CTTCTGGATGCA ::: ::: MetLeuAsnIle	(1-155	ty: arity:	ESULT 11 S-09-724-676-68923 Application US/09724 GEMERAL INFORMATION: APPLICANT: Compugen LTD TITLE OF INVENTION: Variants of alt FILE REFERENCE: 129181,4 Compugen CURRENT APPLICATION NUMBER: US/09/7 CURRENT FILING DATE: 2000-11-28 NUMBER OF SEQ ID NOS: 97222 SOFTWARE: Patentin version 3.2 SEQ ID NO 68923 LENGTH: 3864 TYPE: PAT ORGANISM: Homo sapiens S-09-724-676-68923	AGCCTGTCGGAAGAGGTGGACCGGCTGCGGACCCAGTTA	ACASCICASCISTS TSCASCICCICASCASCASCASCASCASCASCASCASCASCASCASCASC		GTACAI	AspLet		TTACAGAGAAGA euGlnGlnGlnLeuLys	CTCAGI	LysGlu	CTGCTGGGCGAATCTGAG	::: GluLet	CAGGAG	ValG1r	7 A C A C	ACTAAC Thrasn
	TCCGAO	2) ×	2.18e-1 268.50 268.53 41.23% 21.88% 9.83%	Application TION: TION: Pugen LTD TION: Varian 1: 129181.4 C ATION NUMBER LDATE: 2000 LDATE: 2000 ntIn version ntIn version o sapiens	GAGGTO	LEUAL		GAGAC	GluTh		LeuLy	CAAGA GlnGl	SerAs	GAATCTGA	GluGl	CAGCA	GlnLe		LeuGl
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GAAGTT	AAAG : 7sLeu	3864)	••	lcing	1218 2333		euAsn	rggat	spGln		rGGAG :: LeGlu	rGGGA 	isval	ACCTC	:: spмet	AGTGC	/sLys		3GGAT ::: LuGlu
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858	811 CAGGAAATAGAGAAATTGAGAATAGAACTGGATGAAAGCAAACAACAC (::: ::::::: ::::: :::: ::::	Qy
2180	nLeuGluGlnPheArgGluGluLeuGluAsnLysAsn	В
810	CAGGGATCTTGAAAGTTAAAGAT	Qy
2160	2141 GluLeuSerLeuGluValGlnLeuGlnAlaGluArgAspAlaIleAspArgLysGluLys ;	Ф
783	783	Q
2140	2121 GluLeuGluGlnAlaLeuLeuGluAspArgLysHisPheGlyAlaValGluAlaLysPro	Db
783	783	Qy
2120		DЬ
783	CAGAAAAAGGAGCACAGAGAGTTCAGAGCAAAA	Qy
2101		В
723	CTCGGGAAATGGATGTCACAAAGGTGTGTGGGAGAAATGCGCTATCAGCTG	Qy
2081		망
672	GGAAATTCAAAGCCAGCTGGCT	Qy
2062	2043 GluHisGluArgAspValPheGlnGlnGluIleGlnLysLeuGluGlnGlnLeuLysVal	Ъ
612	TTGCCCAACTGGAGGCCCAGGTGGAAAAG	Qy
2042	2023 AlaLeuGluLysGlnLeuGluLysMetArgLysPheLeuAspGluGlnAlaIleAspArg	DЬ
567	ATCAAAGATGTTG	Qy
2022	2003 PheIleGluLeuGluGlnGluLysAsnThrGluLeuMetAspLeuArgGlnGlnAsnGln	망
516	AAGGGCCATTGAGAAAGACATG	Qy
2002	1983 AspAspLeuGlnLysGlnValLysAlaLeuGluIleAspValGluGluGlnValSerArg	В
486		Qy
1982	1963 GluThrGluLysLeuMetLysGluLysLeuGluValGlnCysGlnAlaGluLysValArg	Дb
435	NGGAAGCCAATTTTGAAAAAACCAAGGCTTTAATCCAGTGTGACCAGTTGAGG	Qy
1962		밁
375	STGCTTATGAACAGGTGAAACAAGTTTTGCAA	Qy
1944	1925 LeuGlnGluLeuGluAlaGluGlnGlnGlnIleGlnGluGluArgGluLeuLeuSerArg	Db
336		Qy
1924		В
309	AAGAAAGAGATGACTTGATGTCTGCACTAGTTTCCGTAAGG	Qy
1904	1887 GluGlyValIleAspGlyTyrAlaAspGluLysThrLeuPheGluArgGlnIle	Дb
267	AAGCTGTTCTTTCCCAAACCCCATACTAATGTTCATATGCAGACCATCGAAAGACTGGTT	Qy
1886		Вb
207	GGCTGCTAATACTTGTAACCGTGTTGGTGGTCTTTGTTTG	Qy
1868	:::	Db
147	н	Ωy
1848	::: ::: 1829 GluThrSerSerGlnLeuGluHisAlaLysValThrGlnThrGluLeuMetArgGluSer	рь

US-09-502-945-1 (1-1552) x US-09-724-676-68924 (1-3864) Oy	2.18e-12 Length: 268.50 Matches: 41.33% Conservative 21.88% Mismatches: 9.83% Indels: 5	RESULT 12 US-09-724-676-68924 Sequence 68924, Application US/09724676 GENERAL INFORMATION: APPLICANT: Compugen LTD TITLE OF INVENTION: Variants of alternative splicing FILE REFERENCE: 129181.4 Compugen CURRENT APPLICATION NUMBER: US/09/724,676 CURRENT APPLICATION NUMBER: US/09/724,676 CURRENT FILING DATE: 2000-11-28 NUMBER OF SEQ ID NOS: 97222 SOFTWARE: Patentin version 3.2 SEQ ID NO 68924 LENGTH: 3864 TYPE: PRT ORGANISM: Homo sapiens	Qy 1180 AGCCTGTCGGAAGAGGTGGACCGGCTGCGGACCCAGTTA 1218	Qy 1120 ACAGCCCAGCAGCTGGTGCAGCTCCTCAGCAAGCAGACCAGCTTCTCCTGGAGAGGCAG 117	N) had	Qy 1045CAGTGTGTCCAGCAT 105	Qy 1015 TTACAGAGAAGA 104	Qy 967 GCTCAACTCAGTCAAGAAAAAAGGTATACATATGATAAATTGGGAAAG 101 ::: Db 2241 AlaGlnIleIleGlnGluLysGluValGluIleAspGlnLeuAsnGluGlnValThrLys 226	Qy 919 CTGCTGGGCGAATCTGAGCACCAACTGCACCTGCACCTGACAATCTGAAATA 966 ::: ::: ::: ::: Db 2221 AlaIleLysGluSerAspAlaMetSerThrGlnAspGlnHisValLeuPheGlyLysPhe 224	Qy 859 TTGGAACAGGAGCAGCAGAAGGCCCTGGCCCAGAGAGAGGAGTGCCTGAGACTAACAGAA 918 ::::: :: ::: :::::::::::::::::	Db 2181 GluGluValGlnGlnLeuHisMetGlnLeuGluIleGlnLysLysGluSerThrThrArg 220
57 18 87 18 14				N 1-4				1014 2260			J 2200

966	919 CTGCTGGGCGAATCTGAGCACCAACTGCACCTCACCAGATCTGAAATA	Qy
2220	01 LeuGlnGluLeuGluGlnGluAsnLysLeuPheLysAspAspMetGluLysLeuGlyLeu	Ф
918	NGCAGCAGAAGGCAGCCCTGGCCAGAGAGGAGTGCCTGAGACTAACAGAA	Qy
2200	eGlnLysLysGluSerThrThrArg	뫄
858	AGGAAATAGAGAAATTGAGAATAGAACTGGATGAAAGCAAACAACAC	Qy
810 2180	AGGGATCTTGAAATTAAAGAT. ::: hrgGluGluLeuGluAsnLysAsn	Db Qy
2160	41 GluLeuSerLeuGluValGlnLeuGlnAlaGluArgAspAlaIleAspArgLysGluLys	ઠ
783	783	Qy
2140	$\tt LeuGluGlnAlaLeuLeuGluAspArgLysHisPheGlyAlaValGluAlaLysPro$	рь
783	783	Qy
2120	:::::: ::: 	Db
783	AGAGAGTTCAGAGCAAAA	Qy
2101	LeuSerLysGluGlnLeu	Дb
723		Qy
2081		Ъ
672	AAAGGAAAAGATTTCAGCTATTAATCAACTGGAGGAAATTCAAAGCCAGCTGGCT	Qy
2062	uHisGluArgAspValPheGlnGlnGluIleGlnLysLeuGluGlnGlnLeuLysVal	Ъ
612		οy
2042	::::: ::::::::::::::::::	В
567	-ATGAAAAAGGAAATAACGAAAGAAAGGGAGTACATGGGATCAAAGATGTTG	Qγ
2022		망
516		Qy
2002	SerArg	В
486	436 AAGGAGCTGGAGAGGCAGGCGAGCGACTTGAAAAAAGAACTTGCATCTCAG	Qy
1982	1963 GluThrGluLysLeuMetLysGluLysLeuGluValGlnCysGlnAlaGluLysValArg	рь
435	376 ATATCTGAGGAAGCCAATTTTGAAAAAACCAAGGCTTTAATCCAGTGTGACCAGTTGAGG	Qy
1962	 InLysGluAlaMetLysAlaGluAlaGlyProValGluGlnGlnLeuLeuGln	₽
375	337GAAGCAAGTGCTTATGAACAGGTGAAACAAGTTTTGCAA	Qy
1944	1925 LeuGlnGluLeuGluAlaGluGlnGlnGlnGlnGluGluArgGluLeuLeuSerArg	DЬ
336	310 AGCAGCTTGGCAGATACGCAGCAAAGA	Qy
1924		Db
309	AFGACTTGATGTCTGCACTAGTTTCCGTAAGG	Qy
267 1904	TCATATGCAGACCATCGAAAGACTGGTT:::: ::: sThrLeuPheGluArgGlnIle	Db Qy
1886	69 LeuHisGluGluSerArgAlaArgGluGlnLeuAlaValGluLeuSerLysA	рь
207	8 CTTCTGGCTGATACTTGTAACCGTGTTGGTGGTCTTTGTATGAAATGTGCTCAGCAT	Qy

Qy Db 1	Qy Db 1	Qy Db 1	Qy Db 1	Qу Db 1	us-09-	Alignment Pred. No.: Score: Percent Si Best Local Query Matc	; CURRI ; CURRI ; CURRI ; NUMBI ; SOFTI ; SEQ II ; EINN ; TYPI ; ORG; US-09-7.	- ១ ប	RESULT US-09-	Qy 11 Db 23	Qy 11 Db 23	Qy 1 Db 2	Qy 1 Db 2	Qy 1 Db 2	Оу рь 2	Db 2
208 GAAGC 887 GluGl	148 CTTCT 869 LeuHi	88 TTAGCTG : .849 PheArgG	58 GAA 829 GluThrSers	1 CTTCT ::: 809 MetLe	502-945-1	ment Scores: No.: no.: Local Similarity: Match:	FILE REFERENCE CURRENT APPLIC CURRENT FILING NUMBER OF SEQ SOFTWARE: Pate EQ ID NO 68925 LENGTH: 3864 TYPE: PRT ORGANISM: HOM 09-724-676-689	ENERAL INFOR APPLICANT: C	13 724-676-68929	80 33	20 16	060 GGGAGAG 301 AsnArg-	045 281 IleAr	015 TT 261 Le	967 GCTCA 241 AlaGl	:: 221 AlaIl
GAAGCTGTTCTTTC ::: GluGlyValIleAs	CTTCTGGCTGCTAATACT LuHisGluGluSerArg	TGAATATCA ::: gGlnLysGl	rserserGl	GGATGCATC ::: uAsnIleSe	(1-1552)	lty:	E: 129 CATION G DATE ID NC entin 5 mo sap 925	INFORMATION: INFORMATION: INT: Compugen LTD F INVENTION: Varian	8925 5. Applic	GTCGGAAGA uSerGluGl	AGC :	TAC	gAspLeuGl	ACAGAGAAGA :::::: uGlnGlnGlnLe	CTCAACTCAGTCA ::: aGlnIleIleGl	::: :: IleLysGluSerAs
CCAAACCCATAC pGlyTyrAlaAs	TACTTGTAA : rargalaar	GAGAACTTG nGluAlaTh	nLeuGluHi	CGAGAAGCT ::: rSerArgLe	x US-09-724	2.18e-12 268.50 41.23% 21.88% 9.83%	181.4 Compu MMBER: US :: 2000-11- S: 97222 version 3.2	TD ariants o	11.5	GGTGGACCG uAlaAspSe	AGCTGGTGCAGCT :: luLeuAlaAsnIl	GACGATGAA ::	uThrGlnIl	GA :: lnLeuLysIleThrThr	AGAAAAAG nGluLysGl	::: rAspAlaMe
ΤA	CTTCTGGCTGCTAATACTTGTAACCGTGTTGGTGGTGGTCTTTGTTTG	TTAGCTGAATATCAGAGAACTTGTGAAGAATTTTAAAGAGCAACTAAAGCATAAAGAATTT :::	TCCCAATTGAAGTTTTTGAG ::: ::: SerGlnLeuGluHisAlaLysValThrGlnThrGluLeuMetAr	CTTCTGGATGCATCCGAGAAGCTAAAACTTACTTATGAGGAAAAGTGTGAA ::: ::: ::: 	-676-6	Length: Matches Conserv Mismatc Indels: Gaps:	/724,67	lternat	709724676	AGCCTGTCGGAAGAGGTGGACCGGCTGCGGACCCAGTTA	AGCTGGTGCAGCTCCTCAGCAAGCAGAACCAGCTTCTCCTGGAGAGGCAG ::	ATGAGACGATGAAGCAAAGGCTAAGGCAGCTGGATAAGCACAGCC ::::::: :::::: :GluGluGluIleGluGlnLeuAsnGluValIleG		Asp	TCAACTCAGTCAAGAAAAAAGGTATACATATGATAAATTGGGA	: pAlaMetSerThrGlnAspGlnHis
ATGTTCATATGCAGA ::: luLysThrLeu	GGTCTTTGTT GlnLeuAlaV	AAAGAGCAAC LysCysGlnG	TCCCAATTGA ::: :hrGlnThro	TATGAGGAA? ::: ValGluLysi	8925 (1-386	Length: Matches: Conservative: Mismatches: Indels: Gaps:	on .	ive splici		CAGTTA 121 GlnLeu 234	CAGAACCAGC ::: ThrSer	AGGCAGCTGG GluGlnLeu <i>F</i>	MetSerAspG	AATGAAGAATTGGAGG ::: : :: AsnLysValIleGluG	GATAAATTGO ::: AspGlnLeu <i>l</i>	: AspGlnHisV
CCATCGAAAGA PheGluArg	GGTCTTTGTTTGAAATGTGCTCA ::::: :::::::::::::::::::::::::::	TAAAGCATA/ ;;; ;luGluLeuA/	TCCCAATTGAAGTTTTTGAGGAACGAC ::: thrGlnThrGluLeuMetArgGluSer	AGTGTGAA- euLeuGluA	54)	3864 121 107 162 163 22		ing		15 18	TTCTCCTGGA	BATAAGCACAGCC <i>E</i> :::::: \snGluValIleGl	CAGTGTGTCC ::: : ::slnGluCysValL	AA uLysA	3GA \snGluGlnV	::: /alLeuPheGlyLys
			GGAACGAC rgGluSer	ATTGAG leSer							GAGAGGCAG AsnAlaHis	AGGCC :: luLys	GCAT ; sArg	snGluLeu	AAG Lys	::: lyLysPhe
267 1904	207 1886	147 1868	87 1848	57 1828							1179 2332	1119 2315	1059 2300	1044 2280	101 4 2260	2240

1014 2260	GCTCAACTCAGTCAAGAAAAAAGGTATACATATGATAAATTGGGAAAG	967 2241	DP PA
966 2240	CTCACCAGATCTGAAATA ::: ValLeuPheGlyLysPhe	919 2221	Qу
918 2220	GGCAGCCCTGGCCAGAGAGAGGAGTGCTGAGACTAACAGAA :::::::::::::::::::::::::::::	859 2201	рь
858 2200	GAAAGCAACAC LysGluSerThrThrArg	811 2181	유 상
8 <u>1</u> 0 2180	AAGAT ::: YSASN	784 2161	ДУ
2160	${\tt luLeuSerLeuGluValGlnLeuGlnAlaGluArgAspAlaIleAspArgLysGluLys}$	2141	밁
783		783	Qy
2140	${\tt luLeuGluGlnAlaLeuLeuGluAspArgLysHisPheGlyAlaValGluAlaLysPro}$	2121	Дb
783		783	Qγ
783 2120	CAAAA ::: alArg	724 2102	g 9
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723	CGCTATCAGCTG	673	Qγ
672 2081	TCAGCTATTAATCAACTGGAGGAAATTCAAAGCCAGCTGGCT 	613 2063	99 80
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567 2042	AAGATGTTG ::: :::	517 2023	β Q
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516	. G	487	Qy
486 2002	<pre>JAGGCAGGCGAGCGACTTGAAAAAGAACTTGCATCTCAG :::: </pre>	436 1983	д 2
1982	GluThrGluLysLeuMetLysGluLysLeuGluValGlnCysGlnAlaGluLysValArg	1963	Ъ
435	ATATCTGAGGAAGCCAATTTTGAAAAAACCAAGGCTTTAATCCAGTGTGAGCCAGTTGAGG	376	Qy
1962		1945	Ф
375	GAAGCAAGTGCTTATGAACAGGTGAAACAAGTTTTTGCAA	337	Qy
1944	euGlnGluLeuGluAlaGluGlnGlnGlnIleGlnGluGluArgGluLeuLeuSerArg	1925	망
336	AGCAGCTTGGCAGATACGCAGCAAAGA	310	Qγ
1924	::: :::	1905	B :
309	GTTTCCGTAAGG	268	Ş

Qy 268 AAAGAAAGAGATGACTTGATGTCTGCACTA- ::: ::: :::: ::::: Db 1905 GlnGluLySThrAspIleIleAspArgLeuG Qy 310 AGCAGCTTGGCAGATACGCAAAGA Qy 310 AGCAGCTTGGCAGATACGCAAAGA	69 08 87	Oy 88 TTAGCTGAATATCAGAGAAC :: Db 1849 PheArgGlnLysGlnGluAl OY 148 CTTCTGGCTGCTAATACTTG	Qy 58 GAADb 1829 GluThrSerSerGlnLeuGl	US-09-502-945-1 (1-1552) x US- QY 1 CTTCTGGATGCATCCGAGAA ::: ::: ::: Db 1809 MetLeuAsnIleSerSerAr	Alignment Scores: Pred. No.: Score: Score: Percent Similarity: Best Local Similarity: Query Match: 9.83% DB:	RESULT 14 US-09-724-676A-68923 Sequence 68923, Application US/09724 GENERAL INFORMATION: APPLICANT: Compugen LTD TITLE OF INVENTION: Variants of alt FILE REFERENCE: 129181.4 Compugen CURRENT APPLICATION NUMBER: US/09/7 CURRENT FILING DATE: 2000-11-28 NUMBER OF SEQ ID NOS: 97222 SOFTWARE: PatentIn version 3.2 SEQ ID NO 68923 LENGTH: 3864 TYPE: PRT ORGANISM: Homo sapiens US-09-724-676A-68923	Qy 1180 AGCCTGTCGGAAGAGGTGGACCGGCTGCGGACCCAGTT	Qy 1120 ACAGCCCAGCAGCTGGTGCE : :	Qy 1060 GGGAGAGTACATGAGACGAT Db 2301 AsnArg	Qy 1045Db 2281 IleArgAspLeuGluThrGl	015 261
TGTCTGCACTAGTTTCCGTAAGG 309 I	AlaValGluLeuSerLySAla CAGACCATCGAAAGACTGGTT	TAAAGCATAAAGA ::: :: luGluLeuArgGl TGAAATGTGCTCA	TCCCAATTGAAGTTTTTGAGGAACGAC 87 	945-1 (1-1552) x US-09-724-676A-68923 (1-3864) CTTCTGGATGCATCCGAGAAAGCTAAAACCTTACTTATGAGGAAAAGTGTGAAATTGAG 57 ::: ::: ::: :::	-12 Length: 3864 0 Matches: 121 8 Conservative: 107 8 Mismatches: 162 Indels: 163 Gaps: 22	US/09724676A ts of alternative splicing ompugen : US/09/724,676A -11-28 3.2	AGCCTGTCGGAAGAGGTGGACCGGCTGCGGACCCAGTTA 1218 ::: SerbeuSerGluGluAlaAspSerbeuLysHisGlnbeu 2345	ACAGCCCAGCAGCTGGTGCAGCTCCTCAGCAAGCAGAACCAGCTTCTCCTGGAGAGGCAG 1179 :::	GGGAGAGTACATGAGACGATGAAGCAAAAGGCTAAGGCAGCTGGATAAGCACAGCCAGGCC 1119		104 luLeu 228

1059		1045 2281	ОУ
1044	TACAGAGAAGAANTGAAGAATTGGAGGAA	1015 2261	ф
1014	CAAGAAAAAGGTATACATATGATAAATTGGGA	7	Оy
966	CTGCTGGGCGAATCTGAGCACCAACTGCACCTCACCAGATCTGAAATA ::: ::: AlaIleLysGluSerAspAlaMetSerThrGlnAspGlnHisValLeuPheGlyLysPhe	919 2221	Ф
1 2220	TTGGAACAGGAGCAGCAGAAGGCAGCCCTGGCCAGAGAGTGCCTGAGACTAACAGAA	859 2201	pb Qy
2200	811 CAGGAAATAGAGAAATTGAGAATAGAACTGGATGAAAGCAAACAACAC 858 ::: :::::: ::::: ::: ::	811 2181	ДУ
2180	ACTAACAGGATCTTGAAATTAAAGAT :::	784 2161	pb Qy
2160	GluLeuSerLeuGluValGlnLeuGlnAlaGluArgAspAlaIleAspArgLysGluLys	2141	Дb
783		783	Qy
2140	GluLeuGluGlnAlaLeuLeuGluAspArgLysHisPheGlyAlaValGluAlaLysPro	2121	В
. 783		783	Qy
783 2120	AATAAAACCAACATGGAGAAAGGATGAGGCAGAAAAGGAGCACAGAGAGAG	724 2102	pb Qy
3 723 1 2101	TCTCGGGAAATGGATGTCACAAAGGTGTGGGGAGAAATGCGCTATCAGCTG:::	673 2082	Db Qy
2081	GTTACAAAGGAAAAGATTTCAGCTATTAATCAACTGGAGGAAATTCAAAGCCAGCTGGCT :::	613 2063	PP 64
206	ATCTTGTCTCAGAATATTGCCCAACTGGAGGCCCAGGTGG :::	A 4	β 64
, 204	ATGAAAAAGGAAATAACGAAAGAAGATGTTG :::::: :::::::::::::::::::::::	2023	рь
20	heIleGluLeuGluGlnGluLysAsnThrGluLeuMetAspLeuArgGlnGlnAs	2003	Db
. 516	CAAGAGAAAAGGGCCATTGAGAAAGACATG	487	Qy
486 200	AGGAGCTGGAGAGGCAGCGGAGCGACTTGAAAAAGAACTTGCATCTCAG ::: ::::: ::: ::: ::::: spAspLeuGlnLysGlnValLysAlaLeuGluIleAspValGluGluGlnValSerA	436 1983	ду Дъ
198	GluThrGluLysLeuMetLysGluLysLeuGluValGlnCysGlnAlaGluLysValArg	63	B 3
٠ <u>١</u>	COOL * HEBBEC * * * * * * * OO * * OO GEBER * * BOO.	3 4	2 5
37	G	337 1945	B &
1944	uGlnGluLeuGluAlaGluGlnGlnGlnIleGlnGluAluGluA	1925	Db

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US-09-724-676A-68924

Sequence 68924, Application US/09724676A

GENERAL INFORMATION:
APPLICANT: Compugen LTD
TITLE OF INVENTION: Variants of alternative splicing
FILE REFERENCE: 129181.4 Compugen
CURRENT APPLICATION NUMBER: US/09/724,676A

CURRENT FILING DATE: 2000-11-28

NUMBER OF SEQ ID NOS: 97222

SOFTWARE: PatentIn version 3.2

SEQ ID NO 68924

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; ORGANISM: Homo sapiens
US-09-724-676A-68924
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                                   1945 GlnLysGluAlaMetLysAlaGluAlaGlyProValGluGln-----GlnLeuLeuGln
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 376 ATATCTGAGGAAGCCAATTTTGAAAAAACCAAGGCTTTAATCCAGTGTGACCAGTTGAGG 435
                                                                                                                                                                                                                  268 AAAGAAGAGATGACTTGATGTCTGCACTA-------GTTTCCGTAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                    88 TTAGCTGAATATCAGAGAACTTGTGAAGATCTTAAAGAGCAACTAAAGCATAAAGAATTT 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           58 GAA-----TCCCAATTGAAGTTTTTGAGGAACGAC
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                                                                                                       LeuGlnGluLeuGluAlaGluGlnGlnGlnIleGlnGluGluArgGluLeuLeuSerArg 1944
                                                                                                                                                                                                                                                    GluGlyValIleAspGlyTyrAlaAspGluLysThrLeu----PheGluArgGlnIle
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                                                                                                                                                                                                                                                                                         GAAGCTGTTCTTTCCCAAACCCCATACTAATGTTCATATGCAGACCATCGAAAGACTGGTT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACAGCCCAGCAGCTGGTGCAGCTCCTCAGCAAGCAGAACCAGCTTCTCCTGGAGAGGCAG
                                                                                                                                            AGCAGCTTGGCAGATACGCAGCAAAGA-----
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268.50
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1179	1120 ACAGCCCAGCAGCTGGTGCAGCTCCTCAGCAAGCAGAACCAGCTTCTCCTGGAGAGGCAG	Qy
2315	2301 AsnArgGluGluGluIleGluGlnLeuAsnGluValIleGluLys	Db
1119	1060 GGGAGAGTACATGAGACGATGAAGCAAAGGCTAAGGCAGCTGGATAAGCACAGGCCC	Qy
2300	2281 IleArgAspLeuGluThrGlnIleGluCysLeuMetSerAspGlnGluCysValLysArg	В
1059	1045CAGTGTCTCCAGCAT	Qy
2280	2261 LeuGlnGlnGlnLeuLysIleThrThrAspAsnLysValIleGluGluLysAsnGluLeu	ф
1044	1015 TTACAGAGAAGAAATGAAGAATTGGAGGAA	Qy
2260	2241 AlaGlnIleIleGlnGluLysGluValGluIleAspGlnLeuAsnGluGlnValThrLys	Дb
1014	967 GCTCAACTCAGTCAAGAAAAAAGGTATACATATGATAAATTGGGAAAG	Qy
2240	2221 AlaIleLysGluSerAspAlaMetSerThrGlnAspGlnHisValLeuPheGlyLysPhe	Ър
966	919 CTGCTGGGCGAATCTGAGCACCAACTGCACCTCACCAGATCTGAAATA	Qy
2220	2201 LeuGlnGluLeuGlnGluAsnLysLeuPheLysAspAspMetGluLysLeuGlyLeu	В
918	859 TTGGAACAGGAGCAGCAGAGGCCCTGGCCCAGAGAGGAGGAGTGCCTGAGCAGAACAGAA	Qy
2200	2181 GluGluValGlnGlnLeuHisMetGlnLeuGluIleGlnLysLysGluSerThrThrArg	Дb
858	811 CAGGAAATAGAGAAATTGAGAATAGAACTGGATGAAAGCAAACAACAC	Qγ
2180	2161 GluIleThrAsnLeuGluGluGlnLeuGluGlnPheArgGluGluLeuGluAsnLysAsn	Дb
810	784AGTAACAGGGATCTTGAAATTAAAGAT	Qy
2160	2141 GluLeuSerLeuGluValGlnLeuGlnAlaGluArgAspAlaIleAspArgLysGluLys	Вр
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783	783	Qy
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783	724 AATAAAACCAACATGGAGAAGGATGAGGCAGAAAAGGAGCACAGAGAGTTCAGAGCAAAA	Qy
2101	2082 AsnHisLeuLysGluLysThrAspLysCysSerGluLeuLeuLeuSerLysGluGlnLeu	Дb
723	673 TCTCGGGAAATGGATGTCACAAAGGTGTGTGGGAGAAATGCGCTATCAGCTG	Qy
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672	613 GTTACAAAGGAAAAGATTTCAGCTATTAATCAACTGGAGGAAATTCAAAGCCAGCTGGCT	Qγ
2062	2043 GluH1sGluArgAspValPheGlnGlnGluIleGlnLysLeuGluGlnGlnLeuLysVal	뭥
612	568ATCTTGTCTCAGAATATTGCCCAACTGGAGGCCCAGGTGGAAAAG	Qy
2042	2023 AlaLeuGluLysGlnLeuGluLysMetArgLysPheLeuAspGluGlnAlaIleAspArg	Дb
567	517ATGAAAAAGGAAATAACGAAAGAAAGGGAGTACATGGGATCAAAGATGTTG	Qy
2022	2003 PheIleGluLeuGluGlnGluLysAsnThrGluLeuMetAspLeuArgGlnGlnAsnGln	DЬ
516	487CAAGAGAAAAAGGGCCATTGAGAAAGACATG	ρy
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486	436 AAGGAGCTGGAGAGGCCAGCGGAGCGACTTGAAAAAGAACTTGCATCTCAG	Qy
1982	::: :::	Дb

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Qy
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2316 LeuGlnGlnGluLeuAlaAsnIleGlyGlnLysThrSer-----MetAsnAlaHis 2332
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Search completed: March 21, 2003, 13:52:22 Job time : 90.5926 secs

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-Q-/c9n2_1/USPTO_spool/US09502945/runat_14032003_101100_19180/app_query.fasta_1.10979
-DB-Pending_Patents_AA_Main -QFTM-fastan -SUFFIX-rapm -MINMATCH-0.1 -LOOPCL-0
-LOOPEXT-0 -UNITS-bits -START=1 -END-1 -MATRIX-blosum62 -TRANS-human40.cd1
-LIST-45 -DCCALIGN-200 -THR_SCORE-pct -THR_MAX-100 -THR_MIN-0 -ALIGN-15
-MODE-LOCAL -OUTFMT-pto -NORM-ext -HEAPSIZES-500 -MINLEN-0 -MACLEN-2000000000
-USER-US09502945 @CGN_1 _1_1769_@runat_14032003_101100_19180 -NCPU-6 -ICPU-3
-NO_XLPXY -NO_MMAP -LARGEQUERY -NEG_SCORES-0 -WAIT -LONGLOG -DEV_TIMEOUT-120
-WARN_TIMEOUT-30 -THREADS-1 -XGAPOP-10 -XGAPEXT-0.5 -FGAPOP-6 -FGAPEXT-7
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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RESULT 1 US-09-012-1 US-09-012-1 SEQUENCE GENERAL APPLIC		444443333333322255444444444444444444444	11111111111111111111111111111111111111	Result No.
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Best Local Similarity:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: Sprunger, Suzanne A.
REGISTRATION NUMBER: 41,323
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 498-8284
TELEPHANE: (617) 876-5851
INFORMATION FOR SEQ ID NO: 8:
SEQUENCE CHARACTERISTICS:
INFORMATION FOR SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Ve.
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/012,141
FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 615 amino
TYPE: amino acid
STRANDEDNESS:
TOPOLOGY: linear
MOLECULE TYPE: prot
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ADDRESSEE: Genetics Institute,
STREET: 87 CambridgePark Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 87 Cambr
CITY: Cambridge
STATE: MA
COUNTRY: U.S.A.
ZIP: 02140
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Conservative:
Mismatches:
Indels:
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	ProSerMetProGlnSerAspCys 615	808	Db
	CCCAGCATGCCACAATCTGATTG	$\tilde{\mathbf{L}}$	Qy
607	GlnLeuLeuGluArgGlnSerLeuSerGluGluValAspArgLeuArgThrGlnLeu	588	Дb
1218	CAGCTTCTCCTGGAGAGGCAGAGCCTGTCG	1159	Qy
587	LeuAspLysHisSerGlnAlaThrAlaGlnGlnLeuValGlnLeuLeuSerLysGlnAsn	568	DЬ
1158	CTGGATAAGCACAGCCAGGCCACAGCCAGCTGGTGCAGCTCCTCAGCAAGCA	1099	Qy
567		548	Db
1098	GAGGAACAGTGTGTCCAGCATGGGAGAGTACATGAGACGATGAAGCAAAGGCTAAGGCA	1039	Qy
547	GlnGluLysArgTyrThrTyrAspLysLeuGlyLysLeuGlnArgArgAsnGluGluLe	528	Db
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527		508	Дb
978	ACCAGATCTGAAATAGCTCAACTCAG	952	Qy
507	${\tt TyrLeuLeuLeuThrSerGlnAsnThrPheLeuThrLysLeuLysGluGlu}$	488	Ър
951		951	Qy
487	${\tt GluLeuThrGlnLysIleGlnGlnMetGluAlaGlnHisAspLysThr}$	468	рь
951	· .	951	Qy
467	GlnGlnSerPheSerLysGluAlaLysAlaGlnAlaLeuGlnAla	448	Db
951		951	Qy
447		428	Db
951	GAACTGCTGGGCGAATCTGAGCACCAACTG	916	Qy
427	HisLeuGluGlnGluGlnGlnLysAlaAlaLeuAlaArgGluGluCysLeu	408	Db
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855	CTTGAAATTAAAGATCAGGAAATAGAGAAATTGAGAATAGAACTGGATGAAAGCAAAC		Qy
387		368	Db
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367	argGluMetAspValThrLysValCysGlyGluMetArgTyrGlnLeuAsnLysThrAsn	348	Дb
735	CGGGAAATGGATGTCACAAAGGTGTGTGGAGAAATGCGGCTATCAGCTGAATAAAACCAA	676	Qy
347		328	DЬ
675	ACAAAGGAAAAGATTTCAGCTATTAATCAACTGGAGGAAATTCAAAGCCAGCTGGCTTC	616	Qy
327	ω —	0	Db
615	TCAAAGATGTTGATCTTGTCTCAGAATATTGCCCAACTGGAGGCCCAGGTGGAAAA	556	Qy
307		æ	ДĎ
555	AGGGCCATTGAGAAAGACATGATGAAAAAGGAAATAACGAAAGAAA	496	Qy

RESULT 2
US-09-502-967-70
; Sequence 70, Application US/09502967
; GENERAL INFORMATION:
; APPLICANT: Jacobs, Kenneth

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Percent Similarity:
Best Local Similarity
Query Match:
DB:
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; LENGTH: 615
; TYPE: PRT
; ORGANISM: HOMO 5
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Pred. No.:
Score:
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APPLICANT: Cavallie, Edward R.

APPLICANT: Collins-Racie, Lisa A.

APPLICANT: Evans, Cheryl
APPLICANT: Treacy, Maurice
APPLICANT: Spaulding, Vikki
APPLICANT: Spaulding, Vikki
APPLICANT: Genetics Institute, Inc.
TITLE OF INVENTION: SECRETED PROTEINS AND POFILE REFERENCE: GI 6021-30X
CURRENT APPLICATION NUMBER: US/09/502,967
CURRENT FILING DATE: 2000-02-11
NUMBER OF SEQ ID NOS: 306
SECTION RESERVANCE: Patentin Ver. 2.0
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; GENERAL INFORMATION:
; APPLICANT: INCYTE GE
; APPLICANT: HILLMAN,
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 APPLICANT:
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TANG, Y. Tom
YUE, Henry
AU-YOUNG, Janice
BANDMAN, Olga
AZIMZAI, Yalda
YANG, Junming
LU, Dyung Aina M.
BAUGHN, Mariah R.
PATTERSON, Chandra
                                                                                                  INCYTE GENOMICS,
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; APPLICANT: SHAH, PUTV1
; TITLE OF INVENTION: CELL CYCLE AND PROLIFERATION PROTEINS
; FILE REFERENCE: PF-0722 PCT
; CURRENT APPLICATION NUMBER: US/10/031,915
; CURRENT FILING DATE: 2002-01-18
; PRIOR APPLICATION NUMBER: 60/149,075; 60/153,129; 60/164,647
; PRIOR FILING DATE: 1999-07-21; 1999-09-08; 1999-11-10
; NUMBER OF SEQ ID NOS: 108
; SOFTMARE: PERL PROGRAM
; SEQ ID NO 52
; LENGTH: 713
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; OTHER INFORMATION: Incyte ID
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ORGANISM: Homo sapiens
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                  ThrLysGluLysIleSerAlaIleAsnGlnLeuGluGluIleGlnSerGlnLeuAlaSer
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ESULT 4 CT-US00-35017A-801 CT-US00-35017A-801 Sequence 801, Application PC/TUS0035017A GENERAL INFORMATION: APPLICANT: Hyseq Inc TITLE OF INVENTION: Novel Nucleic Acids and Polypeptides FILE REFERENCE: 784PCT CURRENT APPLICATION NUMBER: PCT/US00/35017A CURRENT FILING DATE: 2000-12-22 PRIOR APPLICATION NUMBER: US09/488,725 PRIOR FILING DATE: 2000-01-21 PRIOR APPLICATION NUMBER: US09/488,725 PRIOR FILING DATE: 2000-01-21 PRIOR FILING DATE: 2000-01-21 PRIOR FILING DATE: 2000-04-25 NUMBER OF SEQ ID NOS: 1478 SEQ ID NO 801 LENGTH: 355 TYPE: PRT ORGANISM: Homo sapiens	1219 CCCAGCATGCCACAATCTGATTGC 1242 	1159 CAGCTTCTCCTGGAGAGGCAGAGCCTGTCGGAAGAGGTGGACCGGCTGCGGACCCAGTTA 1218	1099 CTGGATAAGCACAGCCAGGCCACAGCCAGCAGCTGGTGCAGCTCCTCAGCAAGCA	1039 GAGGAACAGTGTGTCCAGCATGGGAGAGTACATGAGACGATGAAGCAAAGGCTAAGGCAG 1098 	979 CAAGAAAAAGGTATACATATGATAAATTGGGAAAGTTACAGAGAAAAATGAAAAATTG 1038 	952952952 952	86 TyrLeuLeuLeuThrSerGlnAsnThrPheLeuThrLysLeuLysGluGluCysCysThr 60	951 951	566 GluLeuThrGlnLysIleGlnGlnMetGluAlaGlnHisAspLysThrGluAsnGluGln 585	-	46 GlnGlnSerPheSerLysGluAlaLysAlaGlnAlaLeuGlnAlaGlnGlnArgGluGln 56	526 GluLeuLeuGlyGluSerGluHisGInLeuHisLeuThrargGinGluLysAspSerTle 545	16 GAACTGCTGGGCGAATCTGAGCACCAACTGCACCTC	06	56 C	796 CTTGAAATTAAAGATCAGGAAATAGAAATTGAGAATAGAACTGGATGAAAGCAAACAA 855	66 MetGiuLysAspGluAlaGluLysGluHisArgGluPheArgAlaLysThrAsnArgAsp 48	736 ATGGAGAAGGATGAGGCAGAAAAGGAGCCACAGAGAGTTCAGAGCAAAAACTAACAGGGAT 795	

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                                     {\tt GlnArgGluGlnGluLeuThrGlnLysIleGlnGlnMetGluAlaGlnHisAspLysThr}
                                                              LysAspSerTleGlnGlnSerPheSerLysGluAlaLysAlaGlnAlaLeuGlnAlaGln
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	 GluCysCysThrLeuAlaLysLysLeuGluGlnIleSerGlnLysThrAr	LeuAlaLysLysLeu	GluCysCysThr:	301	Db

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APPLICANT: Ghosh, Soumitra S.
APPLICANT: Ghosh, Soumitra S.
APPLICANT: Fahy, Eoin D.
APPLICANT: Tahang, Bling
APPLICANT: Gleson, Bradford W.
APPLICANT: Gleson, Bradford W.
APPLICANT: Glenn, Gary M.
APPLICANT: Gary M.
APPLICANT: Warnock, Dale E.
TITLE OF INVENTION: TARGETS FOR THERAPEUTIC INTERVENTION
TITLE OF INVENTION: IDENTIFED IN THE MITOCHONDRIAL PROTEOME
FILE REFERENCE: 660088, 465P2
CURRENT APPLICATION NUMBER: US/60/389,987
CURRENT FILING DATE: 2002-06-17
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                                                                                    Percent Similarity:
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Sequence 766, App---
; Sequence 766, App---
; GENERAL INFORMATION:
; APPLICANT: Ghosh, Soumitra S.
; APPLICANT: Fahy, Eoin D.
; APPLICANT: Jang, Bing
; APPLICANT: Gibson, Bradford W.
; APPLICANT: Taylor, Steven W.
; APPLICANT: Glenn, Gary M.
; APPLICANT: Glenn, Gary M.
; APPLICANT: Glenn, Gary M.
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                                                                             US-09-502-945-1 (1-1552) x US-60-412-418-766 (1-393)
                                                                                                                   Query Match:
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Best Local Similarity:
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CURRENT FILING DATE: 2002-09-20
NUMBER OF SEQ ID NOS: 3025
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 766
LENGTH: 393
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                  APPLICANT: Taylor, Steven W.
APPLICANT: Glenn, Gary M.
APPLICANT: Warnock, Dalle E.
APPLICANT: Warnock, Dalle E.
TITLE OF INVENTION: TARGETS FOR THERAPEUTIC INTERVENTION
TITLE OF INVENTION: IDENTIFIED IN THE MITOCHONDRIAL PROFILE REFERENCE: 660088.465P3
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                       ATATCTGAGGAAGCCAATTTTGAAAAAACCAAGGCTTTAATCCAGTGTGACCAGTTGAGG
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Matches:
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                                                                                                                                                                                                                                  Score:
                                                                                                                                                                                                                                                                                        ; ORGANISM: Homo sapiens PCT-US01-03800A-1921
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PCT-US01-03800A-1921
                                                                                                                                                                                                                                                                                                                  ; SEQ ID NO 1921
; LENGTH: 172
; TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Hyseq, Inc.
APPLICANT: Tang, Y, Tom et al
TITLE OF INVENTION: Novel Nucleic Acids and Polypeptides
FILE REFERENCE: 21272-030
CURRENT APPLICATION NUMBER: PCT/US01/03800A
CURRENT FILING DATE: 2001-02-05
                                                                                                                                                                                                                                                                                                                                                                                 CURRENT FILING DATE: 2001-02-05
PRIOR APPLICATION NUMBER: 09/560,875
PRIOR FILING DATE: 2000-04-27
PRIOR APPLICATION NUMBER: 09/496,914
PRIOR FILING DATE: 2000-02-03
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AGGGATCTTGAAATTAAAGATCAGGAAATTAGAGAAATTGAGAATAGAACTGGATGAAAGC
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                                                                                            AlaSerArgGluMetAspValThrLysValCysGlyGluMetArgTyrGlnLeuAsnLys
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                                         ThrAsnMetGluLysAspGluAlaGluLysGluHisArgGluPheArgAlaLysThrAsn
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                                                                                                                                                                                                         Similarity:
                                                        Application PC/TUS0103800A
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537.00
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19.66%
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NAME/KEY: UNSURE
LOCATION: 126
OTHER INFORMATION:
US-09-834-366-14401
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Best Local Similarity:
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GENERAL INFORMATION:
APPLICANT: Bejanin, Stephane
                                                                                                                                                                                                                                                                                                                                                                                                  SEQ ID NO 14401
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APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION NUMBER: US/09/834,366
CURRENT FILING DATE: 2001-04-13
PRIOR APPLICATION NUMBER: US 60/197,873
PRIOR FILING DATE: 2000-04-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: ESTS and Encoded Human FILE REFERENCE: 81.US2.REG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: Patent.pm
                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQ ID NOS: 52153
                                                                                                                                                                                                                                                                                                                                                TYPE: PRT
ORGANISM: Homo sapiens
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GAGTTCAGAGCAAAAACTAACAGGGATCTTGAAATTAAAGATCAGGAAATAGAGAAATTG
                                                                ATGCGCTATCAGCTGAATAAAACCAACATGGAGAAGGATGAGGCAGAAAAGGAGCACAGA 768
                                                 MetArgTyrGlnLeuAsnLysThrAsnMetGluLysAspGluAlaGluLysGluHisArg
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Giordano, Jean-Y
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SOFTWARE: Patent.pm
SEQ ID NO 14401
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CURRENT FILING DATE: 2000-04-18
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TITLE OF INVENTION: ESTs and Encoded Human Proteins.
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                                                                                                                                                                                                                                                                                                                                               OTHER INFORMATION:
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                                                                                                                                                   CURRENT APPLICATION NUMBER: PCT/US02/09921

CURRENT FILING DATE: 2002-03-27

PRIOR APPLICATION NUMBER: 60/280,067; 60/280,068; 60/291,280; 60/291,849;

60/291,829; 60/299,428; 60/300,001; 60/299,776

PRIOR FILING DATE: 2001-03-29; 2001-03-29; 2001-05-16; 2001-05-17;

2001-05-17; 2001-06-19; 2001-06-20; 2001-06-20

NUMBER OF SEQ ID NOS: 1146
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                                                                                                                                     SOFTWARE: PERL Program
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                              FEATURE: NAME/KEY: misc_feature
                OTHER INFORMATION: Incyte ID No: LI:474414.28.orf1:2001MAY17
                                                                  ORGANISM: Homo sapiens
                                                                                    TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                     SEQ ID NO 21271
                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION NUMBER: US/09/834,366
CURRENT FILING DATE: 2001-04-13
PRIOR APPLICATION NUMBER: US 60/197,873
PRIOR FILING DATE: 2000-04-18
                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Giordano, Jean-Yves
TITLE OF INVENTION: ESTs and Encoded Human Proteins
FILE REFERENCE: 81.US2.REG
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                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQ ID NOS: 52153
SOFTWARE: Patent.pm
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APPLICANT: Tanaka, Hiroaki
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TYPE: PR
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             GlnLeuLeuSerLysGlnAsnGlnLeuLeuGluArgGlnSer-CysArgLysArgTr
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Jobert, Severin
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; Sequence 21271, Application US/60197873
; GENERAL INFORMATION:
; APPLICANT: Bejanin, Stephane
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Alignment Scores
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APPLICANT: Dumas Milne Edwards, J.B.
APPLICANT: Jobert, S.
APPLICANT: Giordano, J.Y.
APPLICANT: GIORDANG, J.Y.
TITLE OF INVENTION: ESTS and Encoded Human
FILE REFERENCE: GENSET.054PR2
                                                                SOFTWARE: Patent.pm
SEQ ID NO 5141
LENGTH: 62
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LENGTH: 61
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APPLICANT:
                                                                                                         CURRENT APPLICATION NUMBER: US/09/621,976
CURRENT FILING DATE: 2000-07-21
NUMBER OF SEQ ID NOS: 19335
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CURRENT FILING DATE: 2000-04-18
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TITLE OF INVENTION: ESTS and E
FILE REFERENCE: 81.US1.PRO
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Sequence 5141, Application US/60147499
GENERAL INFORMATION:
APPLICANT: Dumas Milne Edwards, J.B.
APPLICANT: Jobert, S.
APPLICANT: Giordano, J.Y.
TITLE OF INVENTION: ESTs and Encoded Human Proteins.
FILE REFERENCE: GENSET 054PR2
CURRENT APPLICATION NUMBER: US/60/147,499
CURRENT FILING DATE: 1999-08-05
NUMBER OF SEQ ID NOS: 19335
SOFTWARE: Patent.pm
SEQ ID NO 5141
Search completed: March 21, 2003, 13:42:51 Job time: 174.803 secs
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ALIGNMENTS

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Sequence 4, Application US/10023219
Publication No. US20030032592A1
GENERAL INFORMATION:
APPLICANT: Nyriad Genetics, Inc.
APPLICANT: Myriad Genetics, Inc.
APPLICANT: Cimbora, Daniel M.
APPLICANT: Cimbora, Daniel M.
APPLICANT: Bartel, Paul L.
TITLE OF INVENTION: Protein Protein Interactions
FILE REFERENCE: 2318-282-II
CURRENT APPLICATION NUMBER: US/10/023,219
CURRENT FILING DATE: 2001-12-20
PRIOR APPLICATION NUMBER: US 60/256,983
PRIOR FILING DATE: 2000-12-21
NUMBER OF SEQ ID NOS: 4
SOFTWARE: Patentin version 3.0
SEQ ID NO 4
LENGTH: 2139
TYPE: PRT
CORGANISM: Homo sapiens
US-10-023-219-4
Alignment Scores:
Pred. No.:
213
Score: 3.21e-10
Percent Similarity: 41.868
Best Local Similarity: 24.218
Mismatches: 158
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Percent Similarity:
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Query Match:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 6, Application US/09727384 Patent No. US20020098511A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR FILING DATE: 1999-12-02
PRIOR APPLICATION NUMBER: US 6
PRIOR FILING DATE: 1999-12-02
PRIOR APPLICATION NUMBER: US 6
PRIOR FILING DATE: 2000-02-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILE REFERENCE: 2318-271
CURRENT APPLICATION NUMBER: US/09/727,384
CURRENT FILING DATE: 2000-12-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION:
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  CTAAAGCATAAAGAATTTCTTCTGGCTGCTAATACTTGTAACCGTGTTGGTGGTCTTTGT
                                      SerAspLeuLysAsnGluIleAlaGluLeuGlnGlyGlnAlaAlaValLeuLysGlu---
                                                                            AAGTTTTTGAGGAACGACTTAGCTGAATATCAGAGAACTTGTGAAGATCTTAAAGAGCAA 129
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Cimbora, Daniel M.
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                                CTGGTGCAGCTCCTCAGCAAGCAGAAC-----
                                                                                                                                                             TTACAGAGAAAATGAAGAATTGGAGGAACAGTGTGTCCAGCATGGGAGAGTACATGAG 1074
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                                                              LeuAlaSerGlnArgLeuGluArgLeuGluMetGluHisAspGlnGluArgGlnGluMet 989
                                                                                                                                                                                             SerAspGlnIleLeuGluLeuLysSerSerHisLys----
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LENGTH: 868
TYPE: PRT
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TITLE OF INVENTION: Methods for Regulating Vascularization
TITLE OF INVENTION: Containing NEK-Like Kinase (GNK)
FILE REFERENCE: Immunex GNK/sGNK PCT
CURRENT APPLICATION NUMBER: US/09/884,001
CURRENT FILING DATE: 2001-06-18
PRIOR APPLICATION NUMBER: 60/113,003
PRIOR FILING DATE: 1998-12-18
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 385 GAAGCCAATTTTGAAAAACCAAGGCT----
                                134 IleGlnThrValThrGlnAlaLysGluValIleGlnGlyGluValArgCysLeuLysLeu 153
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                                                                                                      PheGluAlaGlnGlnGlnAsnSerValIleGluValThrLysGlyGlnLeuGluValGln 133
                                                                                                                                                                          AspLeuAlaGluGlnLeuGlnGlyLeuSerSerAlaLysGluLeuLeuGluSerSerLeu 113
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                                                                                                                                           GCAGATACGCAGCAAAGA-----
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                                                                   GCAAGTGCTTATGAACAGGTGAAACAAGTTTTGCAA-
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Virca, G. Duke
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154 GluLeuAspThrGluArgSerGlnAla 415 ATCAGTGTGACCAGTTGAGGAAAAAGG 11	0 ACAGCCCAGCAGCTGGTGCAGCTCCTC	
154 GluLeuAspThrGluArgSerGlnAla 415 ATCCAGTGTGACCAGTTGAGGAAG	; ;; ; ;; 4 GluAlaAspPheLeuAlaGlnGluAlaGlnLeuLeuGluGluLeu	
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154 GluLeuAspThrGluArgSerGlnAla 415 ATCAGTGTGACCAGTTGAGGAAG	N	_
154 GluLeuAspThrGluArgSerGlnAla 415 ATCCAGTGTGACCAGTTGAGGAAG- 1174 AlaGlnAlaGluGlnGluGlyLysThr 174 AlaGlnAlaGluGlnGluGlyLysThr 472 GAACTTGCATCTCAGCAAGAGAAAAGG 111::: 194 GluValAsnGlnLeuArgGluLysTrp 532 ACGAAA	2 4	
154 GlucuAspThrGluArgSerGlnAlaGluGluArgAspAlaAlaAlaArgG 415 ATCCAGTGGACCAGTTGAGGAAGGAGCTGGAGAGGCAGGCGGAGCGACTTG 416 AlaGlnAlaGluGlnGluGlyLysThrAlaCuGluGlnGlnLysAlaAlaHisG 477 GAACTTGCATCTCAGCAAGAGAAAAGGCCATTGAAAAAAGG 478 GACTTGCATCTCAGCAAGAGAAAAGGCCATTGAGAAAAGAGACATGATGAAAAAGG 479 GAACTTGCATCTCAGCAAGAGAAAAGGCCATTGAAAAAGAGATCAAAAAGG 470 GAACTTGCATCTCAGCAAGAGAAAAGGCCATTGAAAAAGAGATCAAAAAGG 471 AlaClysAlaLeuGluSerLeuGluAysTrpGluLysGluArgSerTrpHisGlnGlnLysGluAysAlaLeuGluArgGluLysTrpGluLysGluArgSerTrpHisGlnGlnGlnGlnGlnGlnGlnGlnGlnGlnGlnGlnGlnG	::: ::: 94 LysalaSerLeuThrLeuSerLeuMetGluLysGluGlnArgLeuLeuVal	
154 GluLeuAspThrGluArgSerGlnAlaGluGluGluArgAspAlaAlaAlaArgG 415 ATCCAGTGTGACCAGTTGAGGAAGGACCTGGAGAGCAGCCGGAGCGACTTG 416	74 GlnGluLysLeuArgGluThrGlnGluTyrAsnArgIleGlnLysGluLeu	
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154 GluLeuAspThrGluArgSerGlnAlaGluGluGluArgAspAlaAlaAlaAragG 415 ATCCAGTTGAGCAGTTGAGGAAGGAGCTGGAGAGGCAGGGAGGGAGCGACTTG 416	54 AspLeuLysSerGlnLeuValAlaGlnAspAspSerGlnArgLeuVal	
154 GluLeuAspThrGluArgSerGlnAlaGluGluGluArgAspAlaAlaAlaArgG 415 ATCCAGTGGACCAGTTGAGGAAGGAGCTGGAGAGCGAGCGAGCGAGCGAGCGAGCGAGCGAGC	14 GAAATAGAGAAATTGAGAATAGAACTGGATGAAAGCAAACAACACTTO	
154 GluLeuAspThrGluArgSerGlnAlaGluGlnGluArgAspAlaAlaAlaAlaArgG 415 ATCCAGTTGAGCAGTTGAGGAAGGAGCTGGAGAGGCAGGGAGGGAGGACGACTTG 416	81	
154 GluLeuAspThrGluArgSerGlnAlaGluGluGluArgAspAlaAlaAlaArgG 415 ATCCAGTGTGAGCAGTTGAGGAAGGAGCTGGAGAGGCGAGCGAGCGAGCGAGCGAGCGAGCGAG		
154 GluLeuAspThrGluArgSerGlnAlaGluGluGluArgAspAlaAlaAlaArgG 415 ATCCAGTGTGAGCAGTTGAGGAAGGAGCTGGAGAGGGAGGGAGGGAGGACTTG	24 AATAAAACCAACATGGAGAAGGATGAGGCAGAAAAGGAGCACAGAGAGTTCAGAGC	
154 GluLeuAspThrGluArgSerGlnAlaGluGluGluArgAspAlaAlaAlaArgG 415 ATCCAGTGGACCAGTTGAGCAAGGAGCTGGAGAGGCAGGCGAGCGACCTTG 415 ATCCAGTGTGACCAGTTGAGGAAGGAGCTGGAGAGGCAGGCGAGCGACTTG 416	o4 CAGCIGGCITCICGGGAAAIGGAIGICAC ::: 94 AspMetLysValGlnLysLeuLysGluGl	
154 GluLeuAspThrGluArgSerGlnAlaGluGluGluArgAspAlaAlaAlaArgG 415 ATCCAGTGGACCAGTTGAGGAAGGAGCTGGAGAGGCAGGCGAGGGAGCGACTTG 416 III	4 LeuLeuGlnThrGlnLysGluLeuAlaAs	
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154 GluLeuAspThrGluArgSerGlnAla 415 ATCCAGTGTGACCAGTTGAGGAAG 1	94 G	
154 GluLeuAspThrGluArgSerGlnAla 154 GluLeuAspThrGluArgSerGlnAla 415 ATCCAGTGTGACCAGTTGAGGAAG 415 ATCCAGTGTGACCAGTTGAGGAAG 1) :	
154 GluLeuAspThrGluArgSerGlnAlaG	5 ATCCAGTGTGACCAGTTGAGGAAG-	
	54 GluLeuAspThrGluArgSerGlnAlaG	

QY 307 AGGAGCAGCTTGGCAGATACGCAGCAAAGAGAAGCAAG	726 Arg	Qy 250ACCATCGAAAGACTGGTTAAAG	Qy 214 GTTCTTTCCCAAACCCATACTAATGTTCATATGCAG ::: ::: Db 706 AlaValGluGluAsnLeuLeuAsnPheArgAsnGln	Qy 154 GCTGCTAATACTTGTAACCGTGTTGGTGGTCTTTGT	Qy 130Db 668 GluAlaLysGlnTyrArgArgGluLe	Qy 88 TTAGCTGAATATCAGAGAACTTGTGAAGATCTTAAAGAGCAA- :::	Qy 37 GAGGAAAAGTGTGAAATTGAAGGTATCCCAATTGAAGTTT :::::: :::	US-09-502-945-1 (1-1552) x US-09-919	Alignment Scores: 2.13e-09 Pred. No.: 231.50 Score: 231.20 Percent Similarity: 41.208 Best Local Similarity: 21.608 Query Match: 8.478 DB: 10	1252 T 530 - 1312 A 1312 A 535 r 1369 G 1369 G	Db 514 AsnGlnAlaGlnAlaGlnAlaGlnLe
AAAGAGAAGCAAGTGCTTATGAACAGGTGAAACAA 366	7	ACCATCGAAAGACTGGTTAAAGAAAGAGATGACTTGATGTCTGCACTAGTTTCCGTA 306	CTTTCCCAAACCCATACTAATGTTCATATGCAG249 :::	GCTGCTAATACTTGTAACCGTGTTGGTGGTCTTTGTTTGAAATGTGCTCAGCATGAAGCT 213 	CTAAAGCATAAAGAATTTCTTCTG 153 :::::: lnTyrArgArgGluLeuGluThrIleValArgGluLysGluAla 685	ATCAGAGAACTTGTGAAGATCTTAAAGAGCAA 129 :: InGlnArgAsnValGluAspIleSerLeuGlnLysIleArgAlaGluSer 667	CCCAATTGAAGTTTTTGAGGAACGAC 87	19-172-29 (1-2125)	Length: 2125 Matches: 108 Conservative: 98 Mismatches: 153 Indels: 141 Gaps: 20	GGTTTAGACTT 1 AlaLeuGlySe 5 GCCTGCAGTGG 1 ::: ServalTrpGl 5	nGlnAlaGlnAlaGlnAlaGlnLeuAlaSerLeu-TyrSerAlaLeu 529

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CURRENT APPLICATION NUMBER: US/09/925,299
CURRENT FILING DATE: 2001-08-10
PRIOR APPLICATION NUMBER: PCT/US00/05883
PRIOR FILING DATE: 2000-03-08
PRIOR APPLICATION NUMBER: 60/124,270
PRIOR ETLING DATE: 1999-03-12
NUMBER OF SEQ ID NOS: 1556
SOFTWARE: PACENTIN VET. 2.0
SEQ ID NO 988
LENGTH: 909
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GENERAL INFORMATION:
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OTHER INFORMATION: X
NAME/KEY: SITE LOCATION: (48)
OTHER INFORMATION: X
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TITLE OF INVENTION: Nucleic Acids, Proteins
FILE REFERENCE: PA102
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ORGANISM: Homo
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LOCATION: (851
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SEQ ID NO 988
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APPLICANT: Rosen et al.
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CURRENT FILING DATE: 2001-08-10
PRIOR APPLICATION NUMBER: PCT/US00/05883
PRIOR FILING DATE: 2000-03-08
PRIOR PPLICATION NUMBER: 60/124,270
PRIOR FILING DATE: 1999-03-12
NUMBER OF SEQ ID NOS: 1556
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US-09-820-843A-113
Sequence 113, Application US/09820843A
Publication No. US20030039963A1
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: A COMPUTATIONAL METHOD FOR THE IDENTIFICATION OF CANDIDATE PRO
TITLE OF INVENTION: USEFUL AS ANTI-INFECTIVES
FILE REFERENCE: Q63915
CURRENT APPLICATION NUMBER: US/09/820,843A
CURRENT FILING DATE: 2001-03-30
NUMBER OF SEQ ID NOS: 118
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SEQ ID NO 113
LENGTH: 2354
TYPE: PRT
ORGANISM: L. major
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NAME/KEY: misc_feature
OTHER INFORMATION: AC00:
NAME/KEY: misc_feature
OTHER INFORMATION: gi|68
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APPLICANT: Skeiky, Yasir A.W.

APPLICANT: Skeiky, Yasir A.W.

APPLICANT: Bhatia, Ajay

APPLICANT: Bhatia, Ajay

APPLICANT: Probst, Peter

APPLICANT: Probst, Peter

APPLICANT: Brannon, Mark

TITLE OF INVENTION: THERAPY AND DIAGNOSIS OF LEISHMANIASI

TITLE OF INVENTION UNMER: US/09/991,496

CURRENT APPLICATION NUMBER: US/09/991,496

CURRENT APPLICATION NUMBER: US/09/991,496

CURRENT APPLICATION APPLICATION OF SEQ ID NOS: 137

SOFTWARE: PAST 137

SOFTWARE: PAST 130

LENGTH: 2310

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Best Local Similarity:
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APPLICANT: Campo
APPLICANT: Webb,
APPLICANT: Dillo
APPLICANT: Skelk
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                                                                                                                                     Sequence 114, Application US/09820843A Publication No. US20030039963A1 GENERAL INFORMATION:
              APPLICANT: Council of Scientific and Industrial TITLE OF INVENTION: A COMPUTATIONAL METHOD FOR TITLE OF INVENTION: USEFUL AS ANTI-INFECTIVES FILE REFERENCE: Q63915
CURRENT APPLICATION NUMBER: US/09/820,843A
CURRENT FILING DATE: 2001-03-30
NUMBER OF SEQ ID NOS: 118
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LENGTH: 2310
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                GluAlaArgGlnGlnLeuAlaAlaAsnAlaGluGluLeuGlnGlnArgLeuAspThrAla
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CURRENT APPLICATION NUMBER: US/09/874,923
CURRENT FILING DATE: 2001-06-04
NUMBER OF SEQ. ID NOS: 122
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; Sequence 73, Application US/09893519A
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; GENERAL INFORMATION:
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                                               LENGTH: 888

TYPE: PRT
ORGANISM: Homo sapiens
FEATURE:
NAME/KEY: misc_feature
OTHER INFORMATION: Corresponds to SI
PUBLICATION INFORMATION:
                                                                                                                                                              PRIOR APPLICATION NUMBER: US 60/224,457
PRIOR FILING DATE: 2000-08-10
NUMBER OF SEQ ID NOS: 146
SOFTWARE: PatentIn version 3.1
SEQ ID NO 73
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: ANADYS PHARMACEUTICALS, INC
APPLICANT: THOMPSON, Craig
APPLICANT: MOORE, Jeffrey
DATABASE ACCESSION NUMBER: Human Genbank/BAA88763
DATABASE ENTRY DATE: 2000-01-06
RELEVANT RESIDUES: (1)..(888)
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BRADLEY, John
DESILVA, Thamara
HARRIS, Sandra
KOMARNITSKY, Svetlana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            THOMPSON, Craig
MOORE, Jeffrey
                                                                                                                                                                                                                                                                                                                                                                                                                   SANDERSON, Karen
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                                                      -----HisLysGluGlnValGluLysLysLysSerAlaGlnMetLeuGluGluAla
                                                                                                               AGCAAACAACACTTGGAACAG---GAGCAGCAGAAGGCAGCCCTGGCCAGAGAGGAGTGC
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US-09-820-843A-73

Sequence 73, Application US/09820843A

Publication No. US2003003965A1

GENERAL INFORMATION:
APPLICANT: Council of Scientific and Industrial Research
TITLE OF INVENTION: A COMPUTATIONAL METHOD FOR THE IDENTIFIC
TITLE OF INVENTION: USEFUL AS ANTI-INFECTIVES
FILE REFERENCE: Q63915

CURRENT APPLICATION NUMBER: US/09/820,843A

CURRENT APPLICATION NUMBER: US/09/820,843A

CURRENT FILING DATE: 2001-03-30

NUMBER OF SEQ ID NOS: 118

SOFTWARE: PatentIn version 3.0
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; OTHER INFORMATION: gi|1045905
US-09-820-843A-73
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Percent Similarity:
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Query Match:
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APPLICANT: Ohlsen, Kari L.
APPLICANT: Ohlsen, Kari L.
APPLICANT: Wall, Daniel
APPLICANT: Wall, Daniel
APPLICANT: Trawick, John D.
APPLICANT: Trawick, John D.
APPLICANT: Yamamoto, Robert T.
APPLICANT: Yamamoto, Robert T.
APPLICANT: Xu, H. Howard
TITLE OF INVENTION: Identification of Essential Genes in
TITLE OF INVENTION: Prokaryotes
FILE REFERENCE: ELITRA.011A
CURRENT APPLICATION NUMBER: US/09/815,242
CURRENT APPLICATION NUMBER: 50/191,078
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
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TYPE: PRT
; ORGANISM: Enterococcus faecalis
US-09-815-242-10617
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US-09-815-242-10617
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PRIOR FILING DATE: 2000-12-22
PRIOR APPLICATION NUMBER: 60/269,308
PRIOR FILING DATE: 2001-02-16
NUMBER OF SEQ ID NOS: 14110
SOFTWARE: FastSEQ for Windows Version
SEQ ID NO 10617
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Patent No. US20020061569A1
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298 GTTTCCGTAAGGAGCTTGGCAGATACGCAG-------
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                                                                   323 GluLysArgSerGluLysGlnGlnLysGluGlnGluThrLysSerLysGlnGlnAlaLeu 342
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                                                                                                                  ATGCAGACCATCGAAAGACTGGTTAAAGAAAGAGAT----GACTTGATGTCTGCACTA 297
                                                                                                                                                                                          CTTTGTTTGAAATGTGCTCAGCATGAAGCTGTTCTTTCCCAAACCCATACTAATGTTCAT 243
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701	GlnLeuLeuAspAlaThrValThrTyrGluGluMetThrLysGlnGlnAlaLeuLeuGln	682	Db	
1170		1129	Qy	
681		662	Db	
1128	GAGACGATGAAGCAAAGGCTAAGGCAGGCTGGATAAGCACAGCCAGGCCAGGCCCAG	1072	Qy	
661	AlaGluLeuGluGluGlnValAlaGluAsnSerGlnArgPheGluValLeuArgGlnGln	642	Db 45	
1071		1030		
641	LysGluLysGlnGlnIleAlaGlnLysLeuThrGluIleSerValGluLysAspArgLeu (622	Db	
1029		979	Qy	
621		607	Db	
978	TCTGAGCACCAACTGCACCACACACTCTGAAATAGCTCAACTCAGT !	931	Qy	
606		587	Db	
930	CAGCAGAAGGCAGCCCTGGCCAGAGAGGAGTGCCTGAGACTAACAGAACTGCTGGGCGAA :	871	Оу	
586		570	DЬ	
870		811	Qy	
569	ValGluLysThrValGlnArgPheThrGluThrLeuSerAlaLeuGlyAlaGluLysGln	550	Db	
810		772	Qy	
549		530	Db	
771	AAAACCAACATGGAGAAGGATGAGGCAGAAAAGGAGCAGAGAGAGAGAGAGAGAGAGA	727	Qy	
529	LeuLeuGluGluGlyGluProCysProValCysGlySerLeuGluHisProLysGln :	510	Db	
726		676	Оу	
509	GluAlaLysLeuGlnThrLysLysSerGlnTrpAlaSerLeuGlnIleGlnArgLeuSer	490	Db	
675		637	Qy	
489	ValGluLeuHisGluLeuThrGlnArgPheAlaValGluGlnGlnGlnLysSerAlaGlu	470	Дb	
636		586	Qy	
469	AsnPheValGluArgTrpGlnLysAsnGlnLysAlaTrpGlnLysIleSerGlnAsnGln	450	Db	
585		571	Qy	
449	GlnGluGlyThrLeuGluLysAlaAsnPheGluCysSerSerValAlaAspHisTrpGln	430	дb	
570		523	Qy	
429	CysGlnGluLysIleThrLeuAlaAspLysValAlaThrAlaLysGlnPheIleGlu	410	Db	
522		463	Qy	
409	AlaIleGlnLysGluTyrGluSer	402	Db	
462		403	Qy	
401	TyrGlnGluTyrGluGlnLeuAlaGlnGlnGlnIleAlaGluGlnAlaAsnTyrGln	383	дb	
402		349	Qy	
382	GlnProLeuIleAlaGluLysGlnGluArgLeuGlnThrIleGlnArgGlnLeuProGln	363	dd	
348		331	Оy	
362	MetGluThrGlnGlnAlaLeuThrAspTrpGlnAlaIleMetSerGluLeuGluGluGln	343	ДĎ	

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; TITLE OF INVENTION: Kinase and Uses Therefor
; FILE REFERENCE: 10147-57U1
; CURRENT APPLICATION NUMBER: US/10/017,216
; CURRENT FILING DATE: 2001-10-23
; PRIOR APPLICATION NUMBER: US 60/242,429
; PRIOR FILING DATE: 2000-10-23
; NUMBER OF SEQ ID NOS: 7
; SOFTWARE: PATENTIN Ver. 2.1
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US-10-017-216-2
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APPLICANT: KAPELLER-LIBERMANN, ROSana
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LENGTH: 2053
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GCATCTCAGCAAGAGAAAAGGGCCATT---
                                   GluGlnLysAlaMetIleAsnAlaMetAspSerLysIleArgSerLeuGluGlnArgIle
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                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                   Sequence 47959, Application Patent No. US20020048763A1
                                                                                                                                                                                         TITLE OF INVENTION: HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES TITLE OF INVENTION: GENE EXPRESSION ANALYSIS BY MICROARRAY FILE REFERENCE: Aeomica-X-1
                                                                     PRIOR APPLICATION NUMBER: US 60/180,312
PRIOR FILING DATE: 2000-02-04
PRIOR APPLICATION NUMBER: US 60/207,456
PRIOR FILING DATE: 2000-05-26
                                                                                                                                                     CURRENT APPLICATION NUMBER: US/09/864,761
CURRENT FILING DATE: 2001-05-23
                                                                                                                                                                                                                                                     APPLICANT: Penn, Sharron G.
APPLICANT: Rank, David R.
APPLICANT: Hanzel, David K
APPLICANT: Chen, Wensheng
                 PRIOR APPLICATION NUMBER: US 09/632,366
PRIOR FILING DATE: 2000-08-03
PRIOR APPLICATION NUMBER: GB 24263.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1004
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1043 ThrThrCysThrMetLeuGluGluGlnValMetAspLeuGluAlaLeuAsnAspGluLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1018 CAGAGAAGAAATGAAGAATTGGAGGAACAGTGTGTCCAGCATGGGAGAGTACATGAGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             828 MetLysAlaGlnGluGluMetIleSerGluLeuArgGlnGlnLysPheTyrLeuGluThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       808 ValGluLeuSerGluAlaAsnLysLeuAlaAlaAsnSerSerLeuPheThrGlnArgAsn
APPLICATION NUMBER: GB FILING DATE: 2000-10-0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGCTCCTCAGCAAGCAGAACCAGCTTCTCCTGGAGAGGCCAGAGCCTGTCGGAAGAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAACAA-----CACTTGGAACAGGAGCAGCAGAAGGCAGCCCTGGCCAGAGAG
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                                                                                                                                                                                                                                                                     Rank, David R.
Hanzel, David K.
2000-10-04
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1024 IleThrGluArgGluMetGlnLeuThrSerGlnLysGln---ThrMetGluAlaLeuLys 1042 HisGlnAspHisSerAspLysAsnArgLeuLeuGluLeuGluThrArgLeuArgGluVal 887 AAGATGTTGATCTTGTCTCAGAATATTGCCCAACTGGAGGCCCCAGGTGGAAAAGGTTACA 618 SerGlyAlaAsnAspGluIleValGlnLeuArgSerGluValAspHisLeuArgArgGlu 1023 TCTGAAATAGCTCAACTCAGTCAAGAAAAAAGGTATACATATGATAAATTGGGAAAGTTA 1017 1197 1003 1077 983 957 897 927 967 947 849 789 907 738 678 847

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Pred. No.:
Score:
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; OTHER INFORMATION: EXPRESSED IN LUNG, SIGNAL = 2
; OTHER INFORMATION: EXPRESSED IN BT474, SIGNAL = 1.1
; OTHER INFORMATION: SWISSPROT HIT: Q99323, EVALUE 3.00e-17
; OTHER INFORMATION: EST_HUMAN HIT: AU132932.1, EVALUE 1.00e-105
US-09-864-761-47959
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NUMBER OF SEQ ID NOS: 49117
SOFTWARE: Annomax Sequence Listing
SEQ ID NO 49959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: PRT
ORGANISM: Homo sapiens
FEATURE:
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OR FILING DATE: 2001-01-30
OR APPLICATION NUMBER: PCT/US01/00665
OR FILING DATE: 2001-01-30
OR APPLICATION NUMBER: PCT/US01/00668
OR FILING DATE: 2001-01-30
OR APPLICATION NUMBER: PCT/US01/00663
OR FILING DATE: 2001-01-30
OR APPLICATION NUMBER: PCT/US01/00662
OR APPLICATION NUMBER: PCT/US01/00661
OR APPLICATION NUMBER: PCT/US01/00661
OR APPLICATION NUMBER: PCT/US01/00661
OR APPLICATION NUMBER: PCT/US01/00670
OR APPLICATION NUMBER: PCT/US01/00670
OR APPLICATION NUMBER: PCT/US01/00670
OR FILING DATE: 2001-01-30
OR APPLICATION NUMBER: PCT/US01/00670
                                                                                                                                                                                                                        244 GlnGluSerLysLeuAsnGluAlaHisLysSerLeuSerThrValGluAspLeuLysAla
                                                                                                                                                                                                                                                                                                                 224 ValGluGluLeuSerPheSerArgGluGlnIleGlnArgAlaArgGlnThrIleAlaGlu
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FILING DATE: 2001-01-29
FILING DATE: 2001-01-29
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APPLICATION NUMBER: US 09/608,408
FILING DATE: 2000-06-30
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FILING DATE: 2001-01-30
APPLICATION NUMBER: PCT/US01/00664
FILING DATE: 2001-01-30
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APPLICATION NUMBER: PCT/US01/00666
FILING DATE: 2001-01-30
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  GluIleValSerAlaSerGluSerArgLysGluLeuGluLeu------
                                                                                                                                                                              CAACTA------AAGCATAAAGAATTTCTTCTGGCTGCTAATACTTGTAAC
                                                                                    CGTGTTGGTGGTCTTTGTTTGAAATGTGCTCAGCATGAAGCTGTTCTTTCCCAAACCCAT
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41.25%
22.54%
8.00%
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                                          ------LysHisGluAlaGluVal---
                                                                                                                                                                                                                                                -----AGAACTTGTGAAGATCTTAAAGAG
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Matches:
Conservative:
Mismatches:
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Qy	Ър	Qy	Оу	Db	Qy	Db	Qy	Db	Qy	Db	Qy	Db	Qy	Db	Qy	ф	Qy	рь	Q	Db	Qy	Db	Qy	Db	Qy	Ф	Qy	Db	Qy	Db	Qy	Db	Ωу	DЬ
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CGGACCCAGTTACCCAGCATGCCACAATCTGATTGCTGACCTGGATGGA	LysGlnGluLeuGluTyrLysSerLysLeuLysAlaLeuAsnGluGluLeuHisLeuGln 593	TTCTCCTGGAGAGGCAGAGCCTGTCGGAAA	CTGGTGCAGCTCCTCAGCAAGCAGAAC 115	GluLysGlnArgAsnThrPheSerPheAlaGluLysAsnPheGluValAsnTyrGlnGlu 553	GAGACGATGAAGCAAAGGCTAAGGCAGCTGGATAAGCACAGCCAGGCCACAGCCCAGCAG 113	IleLeuIleGluGluAsnGluAspLeuLysGlnGlnCysIleGlnLeuAsnGluGluIle 533	AAGTTACAGAGAAGAATGAAGAATTGGAAGAACAGTGTGTGCCAGCATGGGAAGAGTACAT 107	IlePheLeuAspSerIleLysSerLysSerLysAspSerValTrpGluLysGluIleGlu 513	AGTCAAGAAAAAAGGTATACATATGATAAATTGGGA 101	AspMetLeu	ACTGCTGGGCGAATCTGAGCACCAACTGCACCTCACCAGATCTGAAATAGCTC	GlnLeuGluAlaGluAsnSerIleLeuLysAspGluLysLysThrLeuGlu 478	GGAACAGGAGCAGCAGAAGGCAGCCCTGGCCAGAGAG	GluLeuLeuGluLysGlnMetLysGluLysGluAsnAspLeuGlnGluLysPheAla 461	AAATTAAAGATCAGGAAATAGAGA		ATGGAGAAGGATGAGGCAGAAAAGGAGCACAGAGAGTTCAGAGCAAAAACTAACAGGGAT 795	GluMetThrLeuGlnIleAsnGluLeuGlnLysGluIleGluIleLeuArgGlnGluGlu 425	ATGTCACAAAGGTGTGTGGAGAAATGCGCTATCAGCTGAATAA	IleSerLysLeuLysAspLeuGlnGlnSerLeuValAsnSerLysSerGlu 405	ATTTCAGCTATTAATCAACTGGAGGAAATTCAAAGCCAGCTGGCTTCTCGGGAAATG 684	IleLeuGlu 388	ATCTTGTCTCAGAATATTGCCCAACTGGAGGCCCAGGTGGAAAAGGTTACAAAGGAAAAG 627	LysAspAsnLeuLeu 385	AAAAAGGAAATAACGAAA	GlnGlnIleAspGlyLeuGlnAsnGluMetSerGlnLysIleGluThrMetGlnPheGlu 374	AGGCAGGCGGAGCGACTTGAAAAAGAACTTGCATCTCAGCAAGAGAAAAAGGGCCATTGAG 507	IleAsnIleGluLysLeuLys	GCCAATTTTGAAAAAACCAAGGCTTTAATCCAGTGTGACCAGTTGAGGAAGGA	HisGluGluGluLeuSerLysLeuLysGluAspLeuGluIleGluHisArg 339	CAGCAAAGAAGCAAGTGCTTATGAACAGGTGAAACAAGTTTTGCAAATATCTGAGGAA 387	ArgMetAlaGluSerGlnGluAlaGluLeuGluArgLeuArgThrGlnLeuLeuPheSer 322	TCTGCACTAGTTTCCGTAAGGAGCAGCTTGGCAGATACG 327	ThrasnTyrLysIleLysLeuGluMetLeuGluLysGluLysAsnAlaValLeuAsp 302
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Command line parameters:

-MODEL-frame+_n2p.model -DEV=xlp
-Q-Cgn2_1/USPTO_spool/US09502945/runat_14032003_101059_19145/app_query.fasta_1.10979
-D=Issued_Patents_AA -CpmMT-fastan -SUFFIX=rai -MINMATCH=0.1 -LOOPCL=0
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-NO_XLDXY -NO_MMAP -LARGEQUERY -NEG_SCORES=0 -WAIT -LONGLOG -DEV_TIMEOUT=120
-WARN_TIMEOUT=30 -THREADS=1 -XGAPOP=10 -XGAPEXT=0.5 -FGAPOP=6 -FGAPEXT=7
-YGAPOP=10 -YGAPEXT=0.5 -DELOP=6 -DELEXT=7
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                                   233.5
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1: /cgn2_6/ptodata//
2: /cgn2_6/ptodata//
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4: /cgn2_6/ptodata//
5: /cgn2_6/ptodata//
6: /cgn2_6/ptodata//
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Ygapop 6.0 , E
Fgapop 6.0 , E
Delop 6.0 , I
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Match
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/cgn2_6/ptodata/1/iaa/B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/BCTUS_COMB.pep:*
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US-08-477-831C-2
US-09-310-187A-1
US-08-33-700-1
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PCT-US95-16216-1
US-09-572-191-2
US-09-723-262-2
US-09-723-219-2
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-09-298-5	-08-728-323	-08-795-475-	-09-723-820-		-09-171-156A-	-09-005-069	-08-630-822	-08-742-923	8-533	-08-742-923	-08-533-306	-08-960-022	-08-685-871	-08-592-126	-08-742-923A-	-08-533	8-687-080-5	85-576	ປ ຮ93-03077	JS93-06160-	9-452-29	08-483-924-	08-195	-08-467-781-	-08-470)8-466-390-	8-938-105	-US94-00324	-08-428-414A-	-08-282-845-	-08-006-676	-576-
		6,	e 8,	equence 8,	e 21,	equence 62,	e 62,	equence 6, Appl		2, Appl	2, Appl	, App	2, Appl	equence 148, Ap	equence 4, Appl	4	51, App	Sequence 4, Appli	۳	4,	equence 1,	4	4, Appl	4,	e 4, Appl	equence 4,	3, Appl	equence 1, Appl	equence 3, App	equence 2, Appl	equence 1, App	

ALIGNMENTS

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Patent No.
                                                                                                                                       COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Rel. #1.0, ASCII
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/477,831C
FILING DATE: 07-JUN-1995
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: PIERRI, MARGARET A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                 TELEFAX: 212-596-9090 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                               ZIP: 10020-1104
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                           REGISTRATION NUMBER: 30,709
REFERENCE/DOCKET NUMBER: SI
TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-596-9000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES: 60
CORRESPONDENCE ADDRESS:
ADDRESSEE: FISH & NEAVE
SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: SHUWEN, ZHANG
APPLICANT: ENTWISTLE, JOYCELYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: HYALURONAN RECEPTOR PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                STATE: NEW YORK COUNTRY: U.S.A. ZIP: 10020-1104
                                                                                                                                                                                                                                                                                                                                                                                                                          STREET: 1251 AVENUE OF CITY: NEW YORK STATE: NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6429291
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                                                                                                     30,709
ER: SIM-10
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Percent Similarity:
Best Local Similarity:
Query Match:
DB:
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; STRANDEDNESS: sing
; TOPOLOGY: linear
; MOLECULE TYPE: prote
; DESCRIPTION: /desc
US-08-477-831C-11
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                                                                     CAGAATATTGCCCAACTGGAGGCCCCAGGTGGAAAAGGTTACAAAGGAAAAGATTTCAGCT
                                                                                                                                                AlaGluGlnLeuThrArgLeuAspAsnLeuLeuArgGluLysGluValGluLeuGluLys 266
                                                                                                                                                                                                LysLeuGlnGlnLysGluLeuGlnSerGlnSerLeuLeu-----GlnGlnGluLysGlu
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GluLysGluLysIle-----AspGluLysCysGluThrGluLysLeuLeuGluTyrIle
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AlaGlnSerLeuArgAspValThrAlaGlnLeuGluSerGluGlnGluLysTyrAsnAsp 326
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                                                {\tt GlnSerLeuArgAspValThrAlaGlnLeuGluSerValGlnGluLysTyrAsnAspThr}
                                                                                                HisIleAlaAlaHisAlaGlnAlaIleLeuIleAlaGlnGluLysTyrAsnAspThrAla 286
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Matches:
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ULT 2 09-104- eacher N GENERAL APPLITITLE TITLE	586	1225	566	54	1135	527	1105	507	1066	487	1006	467	- 4	901	427	871	407	838	387	799	367	769	347	727	327	682
ILT 2 9-104-324B-4 19-104-324B tent No. 6232460 ENERRAL INFORMATION: APPLICANT: T reci, Ozlem; Sahin, Ugur; Pfreundschuh, Michael TITLE OF INVENTION: Methods For Diagnosis And Treating Cancers, TITLE OF INVENTION: And Methods For Identifying Pathogenic Markers In TITLE OF INVENTION: No. 6232460mal Cells NUMBER OF SEQUENCES: 4 CORRESPONDENCE ADDRESS: ADDRESSEE: Fulbright & Jaworski LLP STREET: 666 Fifth Avenue CITY: New York ZIP: 10103 COMPUTER READABLE FORM:	ArgLysGlnAsnGlu 590	ATGCCACAATCTGAT 1239	CTCCTGGAGGCAGAGCCTGTCGGAAGAGGTGGACCGGCTGCGGACCCAGTTACCCAGC 1244	565	CAGCTT 11 :::		⋗	:::: euTyrGluLysThrLysProPheGlnGlnGlnLeuAspAlaPheGluAlaGluLysGln 5	GTACATGAGACGATGAAGCAAAGGCTAAGGCAGCTGGAT	c	TTGGGAAAGTTACAGAGAAGAAATGAAGAATTGGAGGAACAGTGTGTCCAGCATGGGAGA 1065	GlnGlnAspGluAspPheArgLysGlnLeuGluGluLysGlyLysArgThrAlaGluLys 486		GCCTGAGACTAACA	lu 44		MetAlaGluLysSerValGluAspValGlnGlnGlnIleLeuThrAlaGluSerThrAsn 426	CTGGATGAAAGCAAACACTTGGAACAGGAG 870	ThrLeuLysGluIleGluAspLeuLysLeuGluAsnLeuThrLeuGlnGluLysValAla 406		AsnAspThrAlaGlnSerLeuArgAspValThrAlaGlnLeuGluSerTyrLysSerSer 386	GAGTTCAGAGCAAAAACTAACAGGGATCTT 798	AspThrAlaGlnSerLeuArgAspValThrAlaGlnLeuGluSerValGlnGluLysTyr 366	- H	AlaGlnLeuGluSerGluGlnGluLysTyr	ATGGATGTCACAAAGGTGTGTGGAGAAATGCGCTATCAGCTGAAT 726

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Query Match:
DB:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: 08/892,702
ETILING DATE: 15-July-1997
ATTORNEY/AGENT INFORMATION:
NAME: Hanson, No. 6322460man D.
REGISTRATION NUMBER: 30,946
REFERENCE/DOCKET NUMBER: LUD 5491
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 318-3000
TELEPHONE: (212) 318-3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: (212) 752-59: INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 976 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
PRIOR APPLICATION NUMBER: 08/892,702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: Wordperfect
CURRENT APPLICATION DATA:
APPLICATION UMBER: US/09/104,324B
FILING DATE: 25-June-1998
CLASSIFICATION: 435
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   496
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                                                                                                                                                                                                                                                                                       IleAlaGluGluLeuLysGlyThrGluGlnGluLeu---IleGlyLeuLeuGlnAlaArg 474
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GluGluLeuLeuArgThrGluGlnGlnArgLeuGluLysAsnGluAspGlnLeuLysIle 407
AAGGAGCTGGAGAGGCAGGCGGAGCGACTTGAAAAAGAACTTGCATCTCAGCAAGAGAAA 495
                                                                                            {\tt AsnGluLysLeuLysAsnThrGluLeuThrSerHisCysAsnLysLeuSerLeuGluAsn}
                                                                                                                                                                                           ACGCAGCAAAGAGAAGCAAGTGCTTATGAACAGGTGAAACAAGTTTTGCAAATATCTGAG
                                                                                                                                                                                                                             GluLysGluValHisAspLeuGluIleGlnLeuThrAlaIleThrThrSer-----
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                               LysGluLeuThrGlnGluThrSerAspMetThrLeuGluLeuLysAsnGlnGlnGlu---
                                                                                                                                                           ------GluGlnTyrTyrSerLysGluValLysAspLeuLysThrGluLeuGlu
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1.91e-13
232.50
42.60%
22.08%
8.51%
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Indels:
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Matches:
Conservative:
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	ZIP: 92122 OMPUTER READABLE FORM: MEDLUM TYPE: Floppy disk COMPUTER: IBM PC compatible	ZIP: COMPUT MEDI COMP		
	RY:	COL		
0	SSEE: C T: 4370	ADI		
	ORRESPONDENCE ADDRESS:	CORRESE	·· ··	
totic Phosphoprotein	Lee, wen-Hwa VVENTION: A No. 5710022el Nuclear Mi	TITLE	•• ••	
	uel	APPL		
	5710022 FORMATION:	tent I	. Pa	
	254-6 6. Application US/08328254	ULT 3 08-328-	RESU US-0	
		772	Db	
5	SACCGGCTGCGGACCCAG 121	1177	Qy	
sGlnLeuGluIleGluArg 771	GluLeuSerAsnLeuLysAlaGluLeuLeuSerValLysLysGl	752	₽	
AGCTTCTCCTGGAGAGG 117	⋧	1120	Qy	
rgAlaSerLeuGluIle 751	GlyLeuTyrLysSerLysGluGlnGluGlnSerSerLeuAr	733	ф	
ATAAGCACAGCCAGGCC 111	GGGAGAGTACATGAGAGCGAAGGCTAAGGCAGCTGGATAAGCACAGCCAGGC	1060	Qy	
732	AspLysIleIleGluGluArgAspSerGluLeu	722	ఠ	
AACAGTGTGTCCAGCAT 105	GATAAATTGGGAAAGTTACAGAGAAGAAATGAAGAATTGGAGGA	1000	Qy	
:: ::::: ysHisLysHisGlnTyr 721	LysIleAlaGluMetValAlaLeuMetGluLysHisLysHisGlnTyr	706	ф	
AAAAAAGGTATACATAT 999	CAACTGCACCTCACCAGATCTGAAATAGCTCAACTCAGTCAAGA	940	Qy	
spLysArgCysGlnHis 705	LysVallleAlaAspGluAlaValLysLeuGlnLysGluIleAspLysArgCysGlnHi	686	Db	
ACAGAACTGCTGGGCGAATCTGAGCAC 939	GCCCTGGCCAGAGAGGAGTGCCTGAGACTAACAGAACTGCT	883	Qy	
::: ::: ::: :::	::: ::: LysGluIleGluAspLysLysIleSerGluGluAsnLeuLeuGl	666	Db	
AGGAGCAGCAGAAGGCA 882	CACTTGGAAC <i>P</i>	856	Qy	
leThrAspThrTyrGln 665	::: ::: ::: LeuGluLeuGluLeuGluSerAlaLysGlnLysPheGlyGluIl	646	Db	
855	ACTGGATGAAAGCAAACAA	826	Qy	
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ATCAGGAAATAGAGAAA 825	ACTAACAGG	775	Qy	
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AGGAGCACAGAGAGTTC 774	TATCAGCTGAATAAAACCAACATGGAGAAGGAAGGAGGAAGAAGGAGAGAGA	715	Qy	
SerGluGluAsnCysAsnAsnLeuArg 605	LysArgAspGluValLysCysLysLeuAspLysSerGluGluAs	586	Db	
ACAAAGGTGTGTGGAGAAATGCGC 714	AATGGATGTC	676	Qy	
rgGluGluLeuLysGln 585	AsnGluLeuGluTyrValArgGluGluLeuLy	574	Db	
AAAGCCAGCTGGCTTCT 675	ACAAAGGAAAAGATTTCAGCTATTAATCAACTGGAGGAAATTCA	616	Qy	
::: hrGlnLeuArg 573	MetLeuLysGlnIleGluAsnLeuGlnGluThrGluThrGlnLeuArg	558	DЬ	
CCCAGGTGGAAAAGGTT 615	TCAAAGATGTTGATCTTGTCTCAGAATATTGCCCAACTGGAGGCCCAGGTGGAAAAAGGTT	556	Qy	
luarg 557	AspIleAsnAsnAsnLysLysGlnGluGluArg-	547	DЪ	

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match:
DB:
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Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURENT APPLICATION DATA:
APPLICATION NUMBER: US/08/328,254
FILING DATE: 24-OCT-1994
CLASSIFICATION A35
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION UMBER: US 08/141,239
FILLING DATE: 22-OCT-1993
ATTORNEY/AGENT INFORMATION:
NAME: Campbell, Cathryn A.
REGISTRATION NUMBER: 31,815
REFERENCE/DOCKET NUMBER: P-CJ 1191
TELEPHONE: (619) 535-8949
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENGTH: 2482 mitho acids

FLENGTH: 2482 mitho acids
                                                                                                                                                                                                                                                                                                1675
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1660
1715 IleAlaArgThrAsnGlnGluHisAlaAlaLeuGluAlaGluAsnSerLysGlyGluVal 1734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1582
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1562 MetAlaArgSerLeuLysValPheGluLeuAspLeuValThrLeuArgSerGluLysGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1542 IleLeuAspAlaGluAsnSerLysAlaGluValGluThrLeuLysThrGlnIleGluGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE:
                                                                                                                                                                                                                        442
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 -----TCCCAATTGAAGTTTTTGAGGAACGACTTAGCTGAATATCAGAGAACTTGTGAA 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: amino acid TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OPERATING SYSTEM:
SOFTWARE: PatentI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 CTTCTGGATGCATCCGAGAAGCTAAAACTTACTTATGAGGAAAAGTGTGAAATTGAGGAA :::||||||||
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                                                                                                                                        {\tt SerGluHisHisAlaAspLeuLeuLysGlyArgValGluAsnLeuGluArgGluLeuGluArgCluLeuGluArgGluLeuGluArgGluLeuGluArgGluLeuGluArgGluArgGluLeuGluArgGluArgGluLeuGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluArgGluA
                                                                                                                                                                                                                    CTGGAGAGGCAGGCG------
                                                                                                                                                                                                                                                                                         AAGGCTTTAATCCAGTGTGACCAGTTGAGG------AAGGAG 441
                                                                                                                                                                                                                                                                                                                                                                                                                                         ProIleGluGluGluHisGlnLeu-------ArgAsnSerIleGluLysLeu 1674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTTATGAACAGGTGAAACAAGTTTTGCAAATATCTGAGGAAGCCAATTTTGAAAAAACC 405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGTCTGCACTAGTTTCCGTAAGGAGCAGCTTGGCAGATACGCAGCAAAGAGAAGCAAGT 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SerLysThrAlaValGluMet-----LeuGlnAsnGlnLeuLysGluLeuAsnGluAla 1639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SerSerPheLysSerLeuLeuGluGluLysGluGlnAlaGluIleGlnIleLysGluGlu 1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AsnLeuThrLysGlnIleGlnGluLysGlnGlyGlnLeuSerGluLeuAspLysLeuLeu 1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATCTTAAAGAGCAACTAAAGCATAAAGAATTTCTTCTGGCTGCT-----AATACTTGT 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ValAlaAlaLeuCysGlyAspGlnGluIleMetLysAlaThrGluGlnSerLeuAspPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AACCGTGTTGGTGGTCTTTGTTTGAAATGTGCTCAGCATGAA----GCTGTTCTTTCCCAA 225
                                                                        -----GCATCTCAGCAAGAGAAAAGGGCCATT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2482 amino acids
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PatentIn Release #1.0, Version #1.25
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232.50
40.51%
23.29%
8.51%
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Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                    ----GAGCGACTTGAAAAAGAACTT--- 477
                                                                                                                                                                                                                                                                                            1694
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Qy	504
Db	1735 GluThrLeuLysAlaLysIleGluGlyMetThrGlnSerLeuArgGlyLeuGluLeuAsp 1754
Оу	GAGAAAGAC
Db	1755 ValValThrileArgSerGluLysGluAsnLeuThrAsnGluLeuGlnLysGluGlnGlu 1774
Qy	547 TACATGGGATCAAAGATGTTGATCTTGTCTCAGAATATTTGCCCAACTGGAGGCC 600
Db	1775 ArgileSerGluLeuGluileIleAsnSerSerPheGluAsnIleLeuGlnGluLysGlu 1794
Qy	TGGAAAAGGTTACAAAGGAAAAGATTTCAGCTATT
· Db	lnGluLysValGlnMetLysGluLysS
Qy	646 CTGGAGGAAATTCAAAGCCAGCTGGCTTCTCGGGAAATGGATGTCACAAAGGTGTGT 702
рр	1815 LeuLysGluLeuAsnGluArgValAlaAlaLeuHisAsnAspGlnGluAlaCysLys 1833
Qy	703GGAGAAATGCGCTATCAGCTGAATAAAACCAACATGGAGAAG 744
Db	1834 AlaLysGluGlnAsnLeuSerSerGlnValGluCysLeuGluLeuGluLysAlaGlnLeu 1853
Qy	AGAGAGTTCAGAGCAAAAACTAA
Db	1854 LeuGlnGlyLeuAspGluAlaLysAsnAsnTyrIleValLeuGlnSerSerValAsnGly 1873
Qy	GGGATCTTGAAATTAAAGATCAGGAAATAGA
Db	1874 LeuIleGlnGluValGluAspGlyLysGlnLysLeuGluLysLysAspGluGluIleSer 1893
Qy	ATAGAACTGGATGAAAGCAAACAACACTTGGAACAGGAGC
Db	uValSer
Qy	874 CAGAAGGCAGCCCTGGCCCAGAGAGGGGGGGCTGAGCTAACAGAACTGCTGGGCGAATCT 933
Db	1914 GlyGluHisGlnLeuTrpLysGluGlnAsnLeuGluLeuArgAsnLeuThrValGluLeu 1933
Qy	934 GAGCACCAACTGCACCTCACCAGATCTGAAATAGCTCAACTCAGTCAAGAAAAAAGGTAT 993
Db	1934 GluGlnLysIleGlnValLeuGlnSerLysAsnAlaSerLeuGln 1948
Qy	AAGTTACAGAGAAGAAATGAAGAATTGGAGGAAC
Db	SerTyrLys
Qy	GAGAGTACATG
DЬ	1967 LeuThrLysMetAspLysMetSerPheValGluLysValAsnLysMetThrAlaLysGlu 1986
Qy	PAGCAAAGGCTAAGGCAGCTGGATAAGCACAGCCAGGCCA
В	1987 ThrGluLeuGlnArgGluMetHisGluMetAlaGlnLysThrAlaGluLeuGln 2004
Qy	1135 GTGCAGCTCCTCAGCAGAACCAGAACCAGCTTCTCCTGGAGAGGCCAGAGCCTGTCGGAAGAG 1194
Db	2005 GluGluLeuSerGlyGluLysAsnArgLeuAlaGlyGluLeuGlnLeuLeuLeuGluGlu 2024
Qy	TGGACCGGCTGCGGACCCAGTTACCCAGCAT
Db	2025 IleLysSerSerLysAspGlnLeuLysGluLeu 2035
RESU US-0	ЛЛ 4)8-477-831C-2

Sequence 2, Application US/08477831C Patent No. 6429291
GENERAL INFORMATION:
APPLICANT: TURLEY, EVA A.
APPLICANT: SHUWEN, ZHANG
APPLICANT: ENTWISTLE, JOYCELYN

HYALURONAN RECEPTOR PROTEIN

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Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alignment Scores:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX: 212-596-9090
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: PIERI, MARGARET A.
REGISTRATION UNMBER: 30,709
REFERENCE/DOCKET NUMBER: SIM-10
TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-596-9000
TELEPHA: 212-596-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY: 111
MOLECULE TYPE:
DESCRIPTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .
No.:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION:
NUMBER OF SEQUENCES:
159 GlnGlnGluLysGluLeuSerAlaArgLeuGln---GlnGlnLeuCysSerPheGlnGlu 177
                                                                 141
                                                                                                                            121 GluArgAlaGluThrLeuSerAlaGluMetGlnIleLeuThrGluArgLeuAlaLeuGlu 140
                                                                                                                                                                   232
                                                                                                                                                                                                101
                                                                                                 274
                                                                                                                                                                                                                               184 CTTTGTTTGAAATGT------GCTCAGCATGAAGCTGTTCTTTCCCAAACCCAT 231
                                                                                                                                                                                                                                                                                                 124 GAGCAACTAAAGCATAAAGAATTTCTTCTGGCTGCTAATACTTGTAACCGTGTTGGTGGT 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH:
TYPE: a
                                                                                                                                                                                                                                                                    86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 07-JUN-1995
CLASSIFICATION: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                      69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRANDEDNESS: single TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET: 1251 AVENUE CITY: NEW YORK
                                                                                                                                                                                                                                                                                                                                                                 64 CAATTGAAGTTTTTGAGGAACGACTTAGCTGAATATCAGAGAACTTGTGAAGATCTTAAA 123
                                                                                                                                                                                                                                                                                                                                                                                                  54 LeuCysAlaSerAspGlnVal------GluLysCysLysValAspIleAla 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
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                                                                                                                                                                                                                                                                                                                                                                                                                                     4
                    ACGCAGCAAAGAGAAGCAAGTGCTTATGAACAGGTGAAACAAGTTTTGCAAATATCTGAG 384
                                                                                           AGAGATGAC-----TTGATGTCTGCACTAGTTTCCGTAAGGAGCAGCTTGGCAGAT 324
                                                                                                                                                                                                                                                                                                                               GlnLeuGlu-----GluAspLeuLysGluLysAspArgGluIleLeuSerLeuLys 85
                                                                                                                                                                                                                                                                                                                                                                                                                  CTGGATGCATCCGAGAAGCTAAAACTTACTTATGAGGAAAAGTGTGAAATTGAGGAATCC 63
                                                                                                                                                               -----GAAAGACTGGTTCATATGCAGACCATC---GAAAGACTGGTTAAAGAA 273
                                                                                                                                                                                                                                                                GlnSerLeuGluGluAsn------IleThrPheSerLysGlnIleGluAsp 100
                                                              ArgGlnGluTyrGluLysLeuGlnGlnLysGluLeuGlnSerGlnSerLeuLeu-----
                                                                                                                                                                                                LeuThrValLysCysGlnLeuLeuGluThrGluArgAspAsnLeuValSerLysAspArg 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     H: 606 amino acids amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein
/desc = "RHAMM I protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1.74e-13
232.00
41.51%
22.64%
8.49%
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
Matches:
Conservative:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
120
100
174
136
25
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	5	Qy	Db	Qy	Db	Qγ	Дb	Qγ	рь	Qy	Db	Qy	Db	Qy	ДĎ	Qy	Db	Qy	ф	Qy	DЬ	Qy	Db	Qy	ДЪ	Qy	Db	Qy	Dъ	Qy	рь	Qу	DЬ	Оу	рь	Qy
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-CAGCTTCTCCTGGAGAGGGCAGAGCCTGTCGGAAGAGGTGGACCGGCTGCGG	vsT]eArgAspSerTvrA]aC]nLeHLH	115			::: ::: ::: ::: ::: ::: ::: ::: ::: ::	GTCCAGCATGGGAGAGTACATGAGACGATGAAGCAAAGGCTAAGGCAGCTGGAT 110	::: ::: ArgThrAlaGluLysGluAsnValMetThrGluLeuThrMetGluIleAsnLysTrpArg 476	TATACATATGATAAATTGGGAAAGTTACAGAGAAGAATGAAGAATTGGAAGAACAGTGT 105	LysAsnGlnLeuArgGlnGlnAspGluAspPheArgLysGlnLeuGluGluLysGlyLys 456	GAGCACCAACTGCACCTCACCAGATCTGAAATAGCTCAACTCAGTCAAGAAAAAAGG 990	LeuLysGluGluIleLysGluIleThrSerSerPheLeuGluLysIleThrAspLeu 436	CTGGCCAGAGAGGAGTGCCTGAGACTAACAGAACTGCTGGGCGAATCT 933	AlaGluSerThrAsnGlnGluTyrAlaArgMetValGlnAspLeuGlnAsnArgSerThr 416		GlnGluLysValAlaMetAlaGluLysSerValGluAspValGlnGlnGlnIleLeuThr 396	GAACTGGATGAAAGCAAACAACACTTGGAACAGGAG 870		GAAATTAAAGATCAGGAAATAGAGAAATTGAGAAATA 834		GAAAAGGAGCACAGAGAGTTCAGAGCAAAAACTAACAGGGATCTT 798	GlnGluLysTyrAsnAspThrAlaGlnSerLeuArgAspValThrAlaGlnLeuGluSer 336	CGCTATCAGCTGAATAAAACCAACATGGAGAAGGATGAGGCA 753	GluLysTyrAsnAspThrAlaGlnSerLeuArgAspValThrAlaGlnLeuGluSerGlu 316	ATGGATGTCACAAAGGTGTGTGGAGAAATG 711	LysTyrAsnAspThrAlaGlnSerLeuArgAspValThrAlaGlnLeuGluSerGluGln 296	GAAAAGATTTCAGCTATTAATCAACTGGAGGAAATTCAAAGCCAGCTGGCTTCTCGGGAA 681	TyrAsnAspThrAlaGlnSerLeuArgAspValThrAlaGlnLeuGluSerValGlnGlu 276	TCTCAGAATATTGCCCCAACTGGAGGCCCAGGTGGAAAAGGTTACAAAG 621	ValGluLeuGluLysHisIleAlaAlaHisAlaGlnAlaIleLeuIleAlaGlnGluLys 256	ATAACGAAAGAAAGGGAGTACATGGGATCAAAGATGTTGATCTTG 573	GluArgLysSerThrAlaGluGlnLeuThrArgLeuAspAsnLeuLeuArgGluLysGlu 236	CAGCAAGAGAAAAGGGCCATTGAGAAAGACATGATGAAAAAAGGAA 528	AspAlaValGinGinLysGluGiuGinSerGluArgLeuValLysGinLeuGluGiu 216	GACCAGTTGAGGAAGGAGCTGGAGAGGCAGGCGAGCGACTTGAAAAAGAACTTGCATCT 483	GluMetThrSerGluLysAsnValPheLysGluGluLeuLysLeuAlaLeuAlaGluLeu 197	GAAGCCAATTTTGAAAAAACC

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; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-310-187A-1
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DB:
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Best Local Similarity:
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CURRENT FILING DATE: 1999-05-12
NUMBER OF SEQ ID NOS: 3
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 1
LENGTH: 1939
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APPLICANT: Benichou, Gilles
APPLICANT: Fedoseyera, Eugenia
TITLE OF INVENTION: Involvement of Autoantigens in Cardiac
TITLE OF INVENTION: Graft Rejection
FILE REFERENCE: UCSF-090
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                                                               ---AlaArgAlaLysValGluLysLeuArgSerAspLeuSerArgGluLeuGluGluIle 1148
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SerGluArgLeuGluGluAlaGlyGlyAlaThrSerValGlnIleGluMetAsnLysLys 1168
                                                                                                     AAGGCTTTAATCCAGTGTGACCAGTTGAGG------AAGGAGCTGGAGAGGCAG 453
                                                                                                                                                                        GCTTATGAACAGGTGAAACAAGTTTTGCAAATATCTGAGGAAGCCAATTTTGAAAAAACC 405
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QV 469 AAAGAACTTGCANCTAGCANGAGAANAGGGCCATTGAAAAAGAAAAAGAAAAAAAAAA		•																							
469 AAAGAACTTGCANCTAGCANGAGAANAGGGCCCATTGAGAANAGACATGAANAAGGAA 25 1169 ATGGCAAAGAAAAAAGGTHCATTGAGAATGAAAAAGGAA 25 1269 ATAGGAAAGAAAAAAGGTACATGGGAATCAAAAAGGTACTTGATCTTGATCTCCAGAAT 36 1270 ALASTRALALALALALALATCAAAGGTACAAAGGTACAAAAGGTACAAAAGGTACAAAAGATTTGAACTATTAAT 46 1271 ALASTRALALALALALATCAAAAGGTACAAAGGTACAAAAGGTACAAAGGAAAAAAGGTTACAAAAGGAAAAGGTTACAAAGGAAAAAGGTACAAAGGAAAAAGGTTACAAAGGAAAAAGGTACAAAAGGAAAAAGGTACAAAAGGAAAAAAGGTACAAAAGGAAAAAAGGTACAAAAGGAAAAAAGGTACAAAAGGAAAAAAGGTACAAAAGGAAAAAAGGTACAAAAAGGAAAAAAAGGAAAAAAAGGAAAAAAGGAAAAAA	RESUUS - (US - () Se ; Pa ; Pa ; Pa ; ; ; ; ; ; ; ; ; ; ; ;	Db dq	DЪ	04	D 04	Db	04 5	2 2	Db	Qy	Db Qy	Db	Qy	Db 49	0	Оy	Db .	OV !	ρ γ	Db	Qy	Вρ	Qy	B 8	
1 1 2 3 5 2 5 2 5 2 5 2 5 2 5 2 5 2 5 2 5 2	ULT 6 08-353-700-1 08-353-700-1 equence 1, Applica atent No. 5599919 GENERAL INFERMATIC APPLICANT: YEN, APPLICANT: RATI TITLE OF INVENTI TITLE OF INVENTI TITLE OF INVENTI NUMBER OF SEQUEN CORRESPONDENCE A ADDRESSEE: DA	1201 CGG 1436 Arg	1416	1141	1081 1396	1383	1021	961	1349	901	880 1329	1309 S	829 -	1289	790	754 1269	1249	694	643 1229	1209	583	1189	529	. 469 1169	
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US-08-353-700-1
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ATTORNEY/AGENT INFORMATION:
NAME: REED, JANET E.
REGISTRATION NUMBER: 36,252
TELECOMMUNICATION INFORMATION:
TELEPHONE: (215) 563-4100
TELEPAX: (215) 563-4044
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENCTH: 3248 amino acids
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HYPOTHETICAL: I
ANTI-SENSE: NO
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No.:
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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CURRENT APPLICATION DATA:
                     385
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STRANDEDNESS: si
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                   GAAGCCAATTTTGAA-
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                                                     TyrTyrSerGlySerLysTyrGluAspLeuLysGluLysTyrAsnLysGluValGluGlu
                                                                                           CAAAGAGAAGCAAGTGCTTATGAACAGGTGAAACAAGTTTTG--
                                                                                                                                SerLeuAsnProCysAsnThrProGlnLysIlePheThrThrProLeuThrProSerGln
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                238 ArgArgAspPheSerAlaSerTyrPheSerGlyGluLeuGluValThrProSerArgSer 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              278 HisLeuLeuAspGlnLeuLysAlaGlnAsnGlnGluLeuArgAsnLysIleAsnGluLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                178 ArgLysArgLeuGluAlaGluValLysAlaLeuGlnAlaLysLysAlaSerGlnThrLeu 197
ThrSerGlnGluThrMet 536
                                                                       AsnIleLysGlnCysLeuAsnGlnSerGlnAsnPheAlaGluGluMetLysAlaLysAsn 530
                                                                                                                                                                                      CTGGATAAGCACAGCCAGGCCACAGCCAGCAGCTGGTGCAGCTC-----CTCAGC 1149
                                                                                                                                                                                                                                                                                                                                                                                                                   GAAATAGCTCAACTCAGTCAAGAAAAAAGGTATACATATGATAAATTGGGAAAGTTACAG 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                         LysAlaArgLeuThrGlnGluLeuGlnGlnAlaLysAsnMetHisAsnValLeuGlnAla 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AlaGluSerAlaArgCysSerLeuGluGlnLysIleLysGluLysGluLysGluPheGln 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GluLeuArgLeuGlnGlyHisGluLysGluMetLysGlyGlnValAsnLysPheGlnGlu 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGGCCCAGGTGGAAAAGGTTACAAAGGAAAAGATTTCAGCTATTAATCAACTGGAGGAA 654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ProGlnAlaThrMetAsnHisArgAspIleAlaArgHisGlnAlaSerSerSerValPhe
                                                                                                                                                                                                                           GlnIleLysGluAsnGluLeuArgArgSerMetGluGluMetLysLysGluAsnAsnLeu
                                                                                                                                                                                                                                                                   AGAGTACATGAGACG------ATGAAGCAAAGGCTAAGGCAG 1098
                                                                                                                                                                                                                                                                                                                                          AGAAGAAATGAAGAATTGGAG-------GAACAGTGTGTCCAGCATGGG 1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GluGluLeuSerArgGlnGlnArgSerPheGlnThrLeuAspGlnGluCysIleGlnMet 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAACACTTGGAACAGGAGCAGCAGAAGGCAGCCCTGGCCAGAGAGGAGTGCCTG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATAGAGAAATTGAGAATAGAACTGGAT------GAAAGCAAA 852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ThrAlaLeuGluGlnLysLeuLysLysLeuThrGluAspLeuSerCysGlnArgGlnAsn 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAGAGTTCAGAGCAAAAACTAACAGG------GATCTTGAAATTAAAGATCAGGAA 816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAATGCGCTATCAGCTGAATAAAACCAACATGGAGAAGGATGAGGCAGAAAAAGGAGCAC 765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LeuGlnLeuGlnLeuGluLysAlaLysValGluLeuIleGluLysGluLysValLeuAsn 337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ThrLeuGlnIleGlyLysArgAspAlaAsnSerSerPhePheGlyAsnSerSerSerPro 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGATC-----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATCCAGTGTGACCAGTTGAGGAAGGAGCTGGAGAGG-----
                                                                                                            AAGCAGAACCAGCTTCTCCTGGAGAGGCCAGAGCCTGTCGGAAGAGGTGGACCGGCTGCGG
                                                                                                                                                LeuLysSerHisSerGluGlnLysAlaArgGluValCysHisLeuGluAlaGluLeuLys
                                                                                                                                                                                                                                                                                                                                                                                GluLeuAspLysLeuThrSerValLysGln-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----AGACTAACAGAACTGCTGGGCGAATCTGAGCACCAACTGCACCTCACCAGATCT 960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LysCysArgAspGluLeuValArgThrThrAlaGlnTyrAspGlnAlaSerThrLysTyr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SerTrpGlnGlnGluLysThrProSerHisLeuSerSerAsnSerGlnArgThrProIle
                                                                                                                                                                                                                                                                                                     AsnAsnLeuGluGluPheLysGlnLysLeuCysArgAlaGluGlnAlaPheGlnAlaSer 470
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----TTGTCTCAGAATATTGCCCAACTG
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1209 510

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Percent Similarity:
Best Local Similarity:
Query Match:
DB:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred.
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PCT-US95-16216-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: Reed, Janet E.

REGISTRATION NUMBER: 36,252
TELECOMMUNICATION INFORMATION:
TELEPHONE: (215) 563-4100
TELEFAX: (215) 563-404
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
IFNORM: 73/40-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1, Applicati
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/16216
FILING DATE:
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE:
HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/353,700
APPLICATION NUMBER: US 08/353,700
APPLICATION NOMBER: US 08/353,700
APPLICATION NUMBER: US 08/353,700
APPLICATION NUMBER: 36,252
REGISTRATION NUMBER: 36,252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Yen, Timothy J.
APPLICANT: Rattner, Jerome B.
TITLE OF INVENTION: Nucleic Acid Encoding a Transiently
TITLE OF INVENTION: Expressed Kinetochore Protein, and Methods of Use
NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      No.:
241 CATATGCAGACCATCGAAAGACTGGTTAAAGAAAGAGATGACTTGATGTCTGCACTAGTT 300
                                                                               181
                                                                                                                     115
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                                                                                                                                                                                              95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 3248 amino acids
TYPE: amino acid
STRANDEDNESS: not relevant
TOPOLOGY: not relevant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: Dann, Dorfman, Herrell and Skillman STREET: 1601 Market Street Suite 720 CTTY: Philadelphia
                                                                                                                                                                                                                                  61 TCCCAATTGAAGTTTTTGAGGAACGACTTAGCTGAATATCAGAGAACTTGTGAAGATCTT 120
                                                                                                                                                                                                                                                                       75 IleCysGluSerLeuGluLysThrLysGlnLysIleSerHisGluLeuGlnValLysGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION:
                                                                                                                                                                                                                                                                                                             1 CTTCTGGATGCATCCGAGAAGCTAAAACTTACTTATGAGGAAAAGTGTGAAATTGAGGAA 60
                                                                                                                   GluGlnGluLeuLys-----
                                                                                                                                                      AAAGAGCAACTAAAGCATAAAGAATTTCTTCTGGCTGCTAATACTTGTAACCGTGTTGGT 180
                                                                                                                                                                                        SerGlnValAsnPheGlnGluGlyGlnLeuAsnSerGlyLysLysGlnIleGluLysLeu 114
                                                                           GGTCTTTGTTTGAAATGTGCTCAGCATGAAGCTGTTCTTTCCCAAACCCATACTAATGTT 240
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                                       -----ArgCysLys-----
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227.50
37.55%
19.17%
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Matches:
Conservative:
Mismatches:
Indels:
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Qy	Db	Qy	Qy Db	Db	Qy	Db	Оу	ДĎ	Qy	Db	Qy	Db	Qy	DЬ	Qy	Db	Qy	Db	Qy	Дb	Qy	Дb	Qy	Дb	Qy	Db	Qy	Дb	Qy	Db	Qy	Db	Q
1063	451	1021	961 438	418	907	398	853	378	817	358	766	338	706	318	655	298	595	278	571	258	565	238	505	218	451	198	415	178	385	158	331	138	٠ ٢٥٠
3 AGAGTACATGAGACG	luPheLysGlnLysLeuCysArgAl	AGAAGAATGAAGAATTGGAGGAACAGTGTG	GAAATAGCTCAACTCAGTCAAGAAAAAAGGTATACATATGATAAATTGGG ::: ::: ::: ::: GluLeuAspLysLeuThrSerValLysGln	LysAla	:	B GluGluLeuSerArgGlnGlnArgSerPheGlnThrLeuAspGlnGluCysIle	CAACACTTGGAACAGGAGCAGCAGCAGCAGCCCTGGCCAGAGAGAG	8 AlaGluSerAlaArgCysSerLeuGluGlnLysIleLysGluLysGluLysGluPheG	ATAGAGAAATTGAGAATAGAACTGGAT	B ThrAlaLeuGluGlnLysLeuLysLysLeuThrGluAspLeuSerCysGlnArgGlnAsn	AGAGAGTTCAGAGCAAAAACTAACAGG	B LysCysArgAspGluLeuValArgThrThrAlaGlnTyrAspGlnAlaSerThrLysTyr	GAAATGCGCTATCAGCTGAATAAAACCAACATGGAGAAG	EuginLeuginLeugiuLysAlaLysValgiuLeuTleGluLysGluLysValLeuAsn	ATTCANAGCCAGCTGGCTTCTCGGGAAATGG	: GluLeuA	5 GAGGCCCAGGTGGAAAAGGTTACAAAGGAAAAGATTTCAGCTATTAATCAACTGGAGGAA	HisLeuLeuAspGlnLeuLysAlaGlnAsnGlnGlu		8 ThrLeuGlnIleGlyLysArgAspAlaAsnSerSerPhePheGlyAsnSerSer	5 TTGATC	8 ArgArgAspPheSerAlaSerTyrPheSerGlyGluLeuGluValThrProSerArgS	GAGAAAGACATGATGAAAAAGGAAATAA	8 SerTrpGlnGluLysThrProSerHisLeuSerSerAsnSerGlnArgThrProIle	CAGGCGGAGCGACTTGAAAAAGAACTTGCATCT		⊳	8 ArgLysArgLeuGluAlaGluValLysAlaLeuGlnAlaLysLysAlaSerGlnThrLeu	GAAGCCAATTTTGAA	8 TyrTyrSerGlySerLysTyrGluAspLeuLysGluLysTyrAsnLysGluValGluGlu	CAAAGAG	::: SerLeuAsnProCysAsnThrProGlnLysIlePheThr	TOOGTAAGGE
AGGCAG	AlaSer	TCCAGCATGGG	AAAGTTACAG ::: ::: -GlnLeuGlu	GlnAla	AGATCT	GlnMet		PheGln	GAAAGCAAA	GlnAsn	CAGGAA	LysTyr	GAGCAC	LeuAsn	TGTGGA	::: GlnGlu	GAGGAA	::: GluLeu	CAACTG	SerPro	!	ArgSer	AAGATG	Prolle	GCCATT	ValPhe		ThrLeu	GCTTTA	GluGlu	TCTGAG	serGln	ACGCAG
1098	470	1062	1020 450	437	960	417	906	397	852	377	816	357	765	337	705	317	654	297	594	277	570	257	564	237	504	217	450	197	414	177	384	157	3 O C C

Db 471 GinilelystlukenGiuleukrgArgServenGinGlukenLysLysGlukenAsnace 490 9 195 105 AGCCAMCACCCCACCACCTTOTOTOTOTOTOTOTOTOTOTOTOTOT

1164	1132 CTGGTGCAGCTCCTCAGCAAGCAGAAC	Qy	
1339	1320 GluargThrSerGlnGluMetGluMetLeuArgLysGlnValGluCysLeuAlaGluGlu	Db	
1131	ATGAAGCAAAGGCTAAGGCAGCTGGATAAGGACAGGCCAGGCCACAGCCCAGCAG	Оу	
1319	1300 LysAlaPheGlnGluLysGluGlnLeuArgSerLysLeuGluGluMetTyrGluGluArg	Δb	
1071		Qy	
1299	 1280 LysGluMetGluCysLeuArgMetThrAspGluValGluArgThrGlnThrLeuGluSer	рь	
1011		Оу	
1279		Db	
951		Оу	
1259	::: ::: 1240 GlnGlnLeuLysAsnGluGlnGluGluSerIleLysGluArgLeuAlaLysSerLysIle	Db	
894		Qy	
1239	1220 GlyGlnLeuAspAspIleLysArgGlnLysGluAsnSerAspGlnAsnHisProAspAsn	Db	
852		Qy	
1219	1200 GluMetGluAsnLeuArgLeuGluSerGlnGlnLeuIleGluLysAsnTrpLeuLeuGln	DЪ	
837	1	Qy	
1199	::: ::: 1180 LeuAsnGluAspArgGluValLysAsnAlaGluIleLeuArgMetLysGluGlnLeuArg	ДĎ	
819	•	Qy	
1179		Дb	
783		Qy	
1159	1140 GlnSerProLysThrProProHisPheGlnThrHisLeuAlaLysLeuLeuGluThrGln	Db	
753	753	Оу	
1139	laGluAspPro	Db	
753	;	Qy	
1119	:: lnLysLysAsn	Db	
705		Qy	
1099		Db	
645	CAGCTATTAATCAA	Qy	
1083	1064 AspLeuAlaHisAlaThrGluGlnLeuAsnMetLeuThrGluAlaSerLysLysHisSer	DЬ	
585		Оу	
1063	1048 ArgLeuArgIleLeuSerGluAspIleGluArgAspMetLeuCysGlu	Db	
525	AGAAAAGGGCCATTGAGAAAGACATGATGAAAAAG	Оу	
1047	1028 GluSerArgValLeuIleLysLysGlnGluValAspIleLeuAspLeuLysGluThrLeu	ДЪ	
465		Qy	
426 1027	367 GTTTTGCAAATATCTGAGGAAGCCAATTTTGAAAAAACCAAGGCTTTAATCCAGTGTGAC	Qy db	
1010	ArgSerSerValCysGluLysThrGluThrIleAspThrLeuLysGln	Db	
366	307 AGGAGCAGCTTGGCAGATACGCAGCAAAGAGAAGCAAGTGCTTATGAACAGGTGAAACAA	Qy	

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; SEQ ID NO 2
; LENGTH: 1388
; TYPE: PRT
; ORGANISM: Human
US-09-723-262-2
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Best Local Similarity:
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US-09-723-262-2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 2, Application US/09723262
Patent No. 6379912
GENERAL INFORMATION:
APPLICANT: Beraud, Christophe
APPLICANT: Sakowicz, Roman
APPLICANT: Wood, Kenneth
TITLE OF INVENTION: No. 6379912el motor proteins and methods for
TITLE OF INVENTION: their use
FILE REFERENCE: 1017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION NUMBER: US/09/723,262
CURRENT FILING DATE: 2000-11-27
PRIOR APPLICATION NUMBER: US 09/572,191
PRIOR FILING DATE: 2000-05-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQ ID NOS: 6
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1360 LysLysGluAsnValArgLeuAlaGluGluThrGluLysLeuArgAlaGlu 1376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1165 CTCCTGGAGAGGCCAGACCCTGTCGGAAGAGGTGGACCGGCTGCGGACCCAG 1215
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   367
                                    995
                                                                        307
                                                                                                           975
                                                                                                                                              268
                                                                                                                                                                               955
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                                                                                                                                                                                                                                                 935 LeuGluAlaValArgGlnGluLysGlnLysGluThrAlaLysCysGluGlnGlnMetAla
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                                                                                                                                                                                                                                                                                                                                                                                                                             121 AAAGAGCAACTAAAGCATAAAGAATTTCTTCTGGCTGCTAATACTTGTAACCGTGTTGGT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                               876 PheGluIleAspGlnLeuSerArgAsnLeuGlnAsnPheLysLysGluAsnGluThrLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     856 LeuLeuGluSerLysAlaCysLeuGlnAspSerTyrAspAsnLeuGlnGluIleMetLys 875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 TCCCAATTGAAGTTTTTGAGGAACGACTTAGCTGAATATCAGAGAACTTGTGAAGATCTT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 CTTCTGGATGCATCCGAGAAGCTAAAACTTACTTATGAGGAAAAGTGTGAAAATTGAGGAA 60
                             ArgSerSerValCysGlu------LysThrGluThrIleAspThrLeuLysGln 1010
                                                                AGGAGCAGCTTGGCAGATACGCAGCAAAGAGAAGCAAGTGCTTATGAACAGGTGAAACAA 366
                                                                                                       LysSerArgAspSerAspLysLysValValAlaAspLeuMetAsnGlnIleGlnGluLeu 994
                                                                                                                                                                           LysValGlnLysLeuGluGluSerLeuLeuAlaThrGluLysValIleSerSerLeuGlu 974
                                                                                                                                                                                                              GTTCTTTCCCAAACCCATACTAATGTT-----CATATGCAGACCATCGAAAGACTGGTT 267
                                                                                                                                                                                                                                                                                                                        LysLeuSerLeuGlnPheGluGluAspLysGluAsnSerSerLysGluIleLeuLysVal 934
                                                                                                                                                                                                                                                                                                                                                             GGTCTTTGTTTG-----
                                                                                                                                                                                                                                                                                                                                                                                          LysSerAspLeuAsnAsnLeuMetGluLeuLeuGluAlaGluLys---GluArgAsnAsn
GTTTTGCAAATATCTGAGGAAGCCAATTTTGAAAAAACCAAGGCTTTAATCCAGTGTGAC 426
                                                                                                                                              AAAGAAAGAGAT-----
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224.00
38.36%
20.86%
8.20%
                                                                                                                                                                                                                                                                                     -----AAATGTGCTCAGCATGAAGCT 213
                                                                                                                                                                                                                                                                                                                                                             Conservative: Mismatches: Indels:
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Matches:
                                                                                                                        -GACTIGATGTCTGCACTAGTTTCCGTA 306
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112
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	CTCCTGGAGAGGCAGAGCCTGCGGAAGAGGTGGACCGGCTGCGGACCCAG 1215	1165	Qy	
1359	ArgLeu	1340	Db	
1164	GCTT	1132	ОУ	
1339	GluArgThrSerGlnGluMetGluMetLeuArgLysGlnValGluCysLeuAlaGluGlu	1320	Db	
1131		1072	γQ	
1319		1300	ΔQ	
1071		1012	VΩ	
1299	LysGluMetGluCysLeuArgMetThrAspGluValGluArgThrGlnThrLeuGluSer	1280	Db	
1011		952	Qy	
1279		1260	Db	
951		895	Qy	
1259	GlnGlnLeuLysAsnGluGlnGluGluSerIleLysGluArgLeuAlaLysSerLysIle	1240	Db	
894	:	853	Оу	
1239	GlyGlnLeuAspAspIleLysArgGlnLysGluAsnSerAspGlnAsnHisProAspAsn :	1220	Db	
852		838	Qy	
1219	GluMetGluAsnLeuArgLeuGluSerGlnGlnLeuIleGluLysAsnTrpLeuLeuGln	1200	Db	
837	GAGAAATTGAGAATAGAA	820	Qy	
1199		1180	da	
819	ATCAGGAAATA	784	Оу	
1179	GluGlnGluIleGluAspGlyArgAlaSerLysThrSerLeuGluHisLeuValThrLys	1160	Db	
783	GAAAAGGAGCACAGAGAGTTCAGAGCAAAA	754	Qy	
1159	${\tt GlnSerProLysThrProProHisPheGlnThrHisLeuAlaLysLeuLeuGluThrGln}$	1140	Db	
753		753	Qy	
1139	GluTyrAsnPheLysMetArgGlnLeuGluHisValMetAspSerAlaAlaGluAspPro	1120	Db	
753		706	Qy	
1119	leGlnGluLeuGlnHisLysLeuAsnGlnLysLysGluGluValGluGlnLysLysAsn	1100	Db	
705	CTGGAGGAAATTCAAAGCCAGCTGGCTTCTCGGGAAATGGATGTCACAAAGGTGTGTGGA	646	Qy	
1099	GlyLeuLeuGlnSerAlaGlnGluGluLeuThrLysLysGluAlaLeu	1084	рь	
645	GCCCAACTGGAGGCCCAGGTGGAAAAGGTTACAAAGGAAAAGATTTCAGCTATTAATCAA	586	Оу	
1083	AspLeuAlaHisAlaThrGluGlnLeuAsnMetLeuThrGluAlaSerLysLysHisSer	1064	ФФ	
585	GAAATAACGAAAGAAAGGGAGTACATGGGGATCAAAGATGTTGATCTTGTCTCAGAATATT	526	Оу	
1063	ArgLeuArgIleLeuSerGluAspIleGluArgAspMetLeuCysGlu	1048	Db	
525	GAAAAAGAACTTGCATCTCAGCAAGAGAAAAAGGGGCCATTGAGAAAAGACATGATGAAAAAAG	466	Qy	
1047	GluSerArgValLeuIleLysLysGlnGluValAspIleLeuAspLeuLysGluThrLeu	1028	ДĎ	
465	CAGTTGAGGAAGGAGCTGGAGAGGCAG	427	Оу	
1027	GluLeuLysAspIleAsnCysLysTyrAsnSerAlaLeuValAspArgGlu	1011	Db	

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DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-502-945-1 (1-1552) x US-09-723-219-2 (1-1388)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Alignment Scores:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence 2, Application US/09723219
Patent No. 6391613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH: 1388
TYPE: PRT
ORGANISM: Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/09/723,219
CURRENT FILING DATE: 2000-11-27
PRIOR APPLICATION NUMBER: US 09/572,191
PRIOR FILING DATE: 2000-05-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Wood, Kenneth TITLE OF INVENTION: No. 6391613el motor proteins and methods for TITLE OF INVENTION: their use FILE REFERENCE: 1017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQ ID NOS: 6
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Beraud, Christophe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                              1011 GluLeu-----LysAspIleAsnCysLysTyrAsnSerAlaLeuValAspArgGlu 1027
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               427 CAGTTGAGGAAGGAGCTGGAGAGGCAG---
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                                                                                                                                                                                                                                                                                                                       935 LeuGluAlaValArgGlnGluLysGlnLysGluThrAlaLysCysGluGlnGlnMetAla
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                                                                                                                                                                                                                                                                                        214 GTTCTTTCCCAAACCCATACTAATGTT-----CATATGCAGACCATCGAAAGACTGGTT 267
                                                                                                                                                                                                                                                                                                                                                                                                                            181 GGTCTTTGTTTG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121 AAAGAGCAACTAAAGCATAAAGAATTTCTTCTGGCTGCTAATACTTGTAACCGTGTTGGT 180
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                                                                                 GTTTTGCAAATATCTGAGGAAGCCAATTTTGAAAAAACCAAGGCTTTAATCCAGTGTGAC 426
                                                                                                                  ArgSerSerValCysGlu------LysThrGluThrIleAspThrLeuLysGln
                                                                                                                                       AGGAGCAGCTTGGCAGATACGCAGCAAAGAGAAGCAAGTGCTTATGAACAGGTGAAACAA 366
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Matches:
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Indels:
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Qy 4	66 GAAAAAGAACTTGCATCTCAGCAAGAGAAAAGGGGCCATTGAGAAAAGACATGATGAAAAAG	525
Db 10	48 ArgLeuArgIleLeuSerGluAspIleGluArgAspMetLeuCysGlu	1063
Ωу 5	AAATAACGAAAGAAAGGGAGT	585
Db 10	64 AspLeuAlaHisAlaThrGluGlnLeuAsnMetLeuThrGluAlaSerLysLysHisSer	1083
Ωу 5	86 GCCCAACTGGAGGCCCAGGTGGAAAAAGGTTACAAAGGAAAAGATTTCAGCTATTAATCAA	645
Db 108		1099
Оу б	46 CTGGAGGAAATTCAAAGCCAGCTGGCTTCTCGGGAAATGGATGTCACAAAGGTGTGTGGA	705
Db 1100		1119
Qy 7	06 GAAATGCGCTATCAGCTGAATAAAACCAACATGGAGAAGGATGAGGCA	753
Db 11		1139
Qy 7	53	753
Db 1140	0 GlnSerProLysThrProProHisPheGlnThrHisLeuAlaLysLeuLeuGluThrGln	1159
Ωу 7	AAAAGGAGCACAGAGAGTTCAGAGCA	783
Db 11	60 GluGluGleGluAspGlyArgAlaSerLysThrSerLeuGluHisLeuValThrLys	1179
Qy 7	-	819
Db 11	80 LeuAsnGluAspArgGluValLysAsnAlaGluIleLeuArgMetLysGluGlnLeuArg	1199
Оу 8	20GAGAAATTGAGAATAGAA	837
Db 12		1219
Оу 8	38CTGGATGAAAGCAAA	852
Db 122		1239
Оу в	CACTTGGAACAGGAGCAGCAG	894
Db 124		1259
Оу 8	95 GAGGAGTGCCTGAGACTAACAGAACTGCTGGGCGAATCTGAGCACCAACTGCACCTC	951
Db 12	60 ValGluGluMetLeuLysMetLysAlaAspLeuGluGluValGlnSerAlaLeuTyrAsn	1279
Оу 9	52 ACCAGATCTGAAATAGCTCAACTCAGTCAAGAAAAAAAGGTATACATATGATAAATTGGGA	1011
Db 12	80 LysGluMetGluCysLeuArgMetThrAspGluValGluArgThrGlnThrLeuGluSer	1299
Qy 10	12 AAGTTACAGAGAAGAATGAAGAATTGGAGGAACAGTGTGTCCAGCATGGGAGAGTACAT	1071
Db 13	<pre>(::: :: :: :: :: :: ::: ::: ::: ::: ::: ::: ::: ::: ::: </pre>	1319
QY 107	2 GAGACGATGAAGCAAAGGCTAAGGCAGCTGGATAAGCACAGCCAGGCCACAGCCCAGCAG	1131
Db 13	20 GluArgThrSerGlnGluMetGluMetLeuArgLysGlnValGluCysLeuAlaGluGlu	1339
Qy 11		1164
Db 13	40 AsnGlyLysLeuValGlyHisGlnAsnLeuHisGlnLysIleGlnTyrValValArgLeu	1359
Оу 116	GCCTGTCGGAAGAGGTGGACCGGCTGCGGACCC	
Db 136	0 LysLysGluAsnValArgLeuAlaGluGluThrGluLysLeuArgAlaGlu 1376	

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;. TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: prot
US-08-056-200-94
                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
Best Local Similarity:
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GENERAL INFORMATION:
APPLICANT: Steinert, Peter
APPLICANT: Lee, Seung-Chul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Fedrick, Michael F.
REGISTRATION NUMBER: 36,799
REFERENCE, DOCKET NUMBER: NIH054.001A
TELECOMMUNICATION INFORMATION:
TELEPHONE: (714) 760-0404
TELEPAX: (714) 760-9502
INFORMATION FOR SEQ ID NO: 94:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/056,200
FILING DATE: 30-APR-1993
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
LENGTH: 1898 amino aci
TYPE: amino acid
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MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION: NAME: Fedrick, Michael F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
ADDRESSEE: Knobbe, Martens, Olson & Bear
STREET: 620 Newport Center Drive, Sixteenth Floor
CITY: Newport Beach
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: Trichohyalin and Transglutaminase-3 and TITLE OF INVENTION: Mehods of Using Same NUMBER OF SEQUENCES: 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Kim, In-Gyu
APPLICANT: Chung, Soo-Il
APPLICANT: Park, Sang-Chul
 576
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ZIP: 926
TCAGAATATTGCCCAACTGGAGGCCCAGGTGGAAAAGGTTACAAAGGAAAAGATTTCAGC 635
                                   pLeuLysArgGluGluGluThrGluArgHisGluGln------
                                                      GATGAAAAAGGAAATAACGAAAGAAAGGGAGTACATGGGATCAAAGATGTTGATCTTGTC
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                                                                                                        GGAGCGACTTGAAAAAAGAACTTGCATCTCAGCAAGAGAAAAAGGGGCCATTGAGAAAAGACAT 515
                                                                                                                                                                            gArgGluGlnGlnLeuArgArgGluGlnGluGluGluArgHisGluGlnLysHisGluGl 459
                                                                                                                                                                                                                   CCAGTGTGACCAGTTGAGGAAGGAGCTGGAG-----AGGCAGCC 455
                                                                                                                                                                                                                                                      nLeuArgArgGluGlnGlnLeuArgArgGluGlnGlnLeuArgArgGluGlnGlnLeuAr 439
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Kim, In-Gyu
Chung, Soo-Il
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	OMPUTER READABLE FORM:	COMP	
	COUNTRY: U.S.A. ZIP: 92660		٠. ٠.
	CA		
	STREET: 620 Newport Center Drive, Sixteenth Floor CITY: Newport Beach		٠. ٠.
	n & Bear	AD	٠.
	ESPONDENCES: 11/	CORR	٠. ٠.
	E OF INVENTION: Mehods of Using Same	TITL	٠.
	bn	TITL	٠
	ICANT: Park, Sang-Chul	APPL	
	ICANT: Kim, in-Gyu	APPL	
	ICANT: Lee, Seung-Chul	APPL	٠.
	APPLICANT: Steinert, Peter M.	APPL	٠. ،
	NO. 5958752	Patent No	
	e 94, Application US/08800644	segueno	·· 6
	_	SULT	RE
	sSerArgIlePro 721	717	В
	GACCCAGTTACCC 1221	502T	γΩ
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717	uGluArqArqGluGlnGluLeuAlaGluGluGluGlnGluGlnAlaArqGluArqIleLy	697	닭
120	TG	1164	Qy
697	gLeuLysArgGluGluGluGluArgLeuGluGlnArgLeuLysArgGluHisGluGl	677	Dβ
116	CTGGTGCAGCTCCTCAGCAAGCAGCAGCT	1132	Qy
677	uGlnGluGluArgArgHisGluGlnLeuArgArgGluGlnGlnArgArgGluGlnAr	657	Дb
113	AAGGCAGCTGGATAAGCACAGCCAGGCCACAGCCCAGCAGC	1092	Qy
657	uArgLeuLysArgGluGluProGluGluGluArgArgHisGluLeuLeuLysSerGluGl	637	ДĎ
109	AGAATTGGAGGAACAGTGTGTCCAGCATGGGAGGGAGGTACATGAGACGATGAAGGCT	1032	Qy
637	gLeuGluGlnGluGluArgArgAspGl	628	ф
103	AAAGGTATACATATGATAAATTGGGAAAGTT	972	Qy
628	gLeuLysArgGluGlnGluGluArgLeuGlnGlnArgLeuLysArgGluGluValGluAr	608	ДD
971	ACTGCTGGGCGAATCTGAAGCACCAACTGCACCTCACCAGATCTGAAATAGCTCA	918	Qy
809	gGluGluGluGluArgArgAspGlnLeuLeuLysArgGluGluGluArgArgGlnGlnAr	588	Д
917	GGAGCAGCAGAAGGCAGCCCTGGCCAGAGAGGAGTGCCTGAGACTAACAGA	867	Qy
588	uLeuLysArgGluGluGluLysArgLeuGluGlnGluArgArgGluGlnArgLeuLysAr	568	Db
966	GGA	807	Qy
568	nGlnArgLeuArgSerGluGlnGlnLeuArgArgGluGlnGluGluArgLeuGluGlnLe	548	Db
908	\AAGGAGCACAGAGTTCAGAGCAAAAA	756	Qy
548	gGluGlnGluGluArgArgGluGlnArgLeuLysArgGlnGluGluGluGluArgLeuGl	528	ДD
755	ATGCGCTATCAGCTGAATAAAACCAACATGGAGAAGGATGAC	696	Qy
528	sLeuGluGluGluGluArgArgGluGlnGlnGlnGlnArgArgGluGlnGlnLeuArgAr	509	DЬ
695	Η.	636	Qy
509	uArgArgLysGlnGlnLeuLysArgAspGlnGluGluGluArgArgGluArgTrpLeuLy	489	ф

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Best Local Similarity:
Query Match:
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INFORMATION FOR SEQ ID NO: 94:
SEQUENCE CHARACTERISTICS:
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TELEFAX: (714) 760-9502
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APPLICATION NUMBER: US 08/056,200
FILING DATE: 30-APR-1993
ATTORNEY/AGENT INFORMATION:
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SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                   548
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568 uLeuLysArgGluGluGluLysArgLeuGluGlnGluArgArgGluGlnArgLeuLysAr 588
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REGISTRATION NUMBER: 36,799
REFERENCE/DOCKET NUMBER: NIH054.001A
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                                                              \verb|nGlnArgLeuArgSerGluGlnGlnLeuArgArgGluGlnGluGluArgLeuGluGlnLe|\\
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Matches:
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APPLI FILI CLAS. PRIOR. APPL APPL PRIOR. APPL FILI PRIOR. APPL FILI PRIOR. APPL FILI PRIOR. APPL FILI PRIOR. APPL FILI	STATE: COUNTR ZIP: COMPUTER MEDIUM COMPUT COMPUT COMPUT COPERAT SOFTWA	SULT 13 -08-685-55 Sequence : Sequence : Seption No Patent No Pate	1164 697 1209 717	1132 677	1092 657	1032 637	972 628	918 608	867 588
CATION NUMBER 3 DATE: 24-4) IFICATION: 4 PPLICATION DA PPLICATION UMBER 3 DATE: 20-N PPLICATION NUMBER 3 DATE: 05-4) DATE: 05-4 PPLICATION NUMBER 3 DATE: 105-A PPLICATION NUMBER 2 DATE: 105-A PPLICATION NUMBER 3 DATE: 105-A PPLICATION NUMBER 5 DATE: 105-A PPLICATION NUMBER 8 DATE: 105-A PPLICATION NUMBER 1 DATE: 105-A PRATION NUMBER	STATE: D.C. COUNTRY: USA ZIP: 20007-5109 ZIP: 20007-5109 MEDIUM TYPE: Floppy disk COMPUTER: IBM PC compatible COPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, Version #1.30 JRRENT APPLICATION DATA:	1, Application 1, Application 0, 5906819 INFORMATION: CANT: Kaibuchi, CANT: Iwamatsu, CANT: Iramatsu, CANT: Ito, Masa CANT: Ito, Masa CANT: Ito, Masa CANT: ITO MASA CANT: INVENTION: R OF SEQUENCES: R OF SEQ	TCTCCTGGAGAGCCAGAGCCTGTCGGAACAGGTG	CAGCTCCTCAGCAAGCAGAACCAGCT :::::::::: ::::::::	AAGGCAGCTGGATAAGCACAGCCAGGCCACAGCCCAGCAG	AGAATTGGAGGAACAGTGTGTGTCCAGCATGGGAGAGTACATGAGACGATGAAGCAAAGGCT 1091	ACTCAGTCAAGAAAAAGGTATACATATGATAAATTGGGAAAGTTACAGAGAAGAAATGA 1031 : ::: gLeuGluGlnGlu	ACTGCTGGGCGAATCTGAGCACCAACTGCACCTCACCAGATCTGAAATAGCTCA 971	GGAGCAGCAGAAGGCAGCCCTGGCCAGAGAGGAGGAGTGCCTGAGACTAACAGA 917

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TELEFAX: 904136
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 1388 amino acids
TYPE: amino acid
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TELECOMMUNICATION INFORMATION:
TELEPHONE: (202)672-5300
TELEPAX: (202)672-5399
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                                                                   AGGGAGTACATGGGATCAAAGATGTTGATCTTGTCTCAGAATATTGCCCCAACTGGAGGCC
                                                                                                                                                                             GCGGAGCGACTTGAAAAAGAACTTGCA-----
CAGGTGGAAAAGGTTACAAAAGGAAATTTCAGCTATTAATCAACTGGAGGAAATTCAA 660
                                                                                          TTTTTGAGGAACGACTTAGCTGAATATCAGAGAACTTGTGAA------GATCTT 120
                                                                                                                        AAAAGGGCCATTGAGAAA-----GACATGATGAAAAAGGAAATAACGAAAGAA
                                                                                                                                                  ArgAspSerLeuAlaAlaGlnLeuGluIleThrLeuThrLysAlaAspSerGluGlnLeu
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AGCCACCTGCCTTCTCGGGAAATGGAATGCACAAAGGTGTGTGGAGAAATGGGCTATCAG 720 6 ArgThrLeuThrSer	RESULT 14 US-08-006-6 ; Sequence ; Patent No ; GENERAL ; APPLIC TITLE ; NUMBER ; CORRES ADDR STRES ; CTTY STAT CCUTY	Qy 130: Db 115: Qy 136: Db 116:	22 13 24	114 109 118 111	Qy 961 Db 1055 Qy 1021 Db 1072 Qy 1081 Db 1085	Qy 841 Db 1019 Qy 901 Db 1037	Qy 661 Db 976 Qy 721 Db 988 Qy 781 Db 1002
	768-1 1, Application US/08006676B 1, S411865 INPORMATION: OF INVENTION: Diagnosis of Leishmaniasi OF SEQUENCES: 3 PONDENCE ADDRESS: ESSEE: Jeffrey B. Oster ET: 8339 SE 57th Street EMERCE ISland E: Washington TRY: USA 98040-4906	3 TTTAGACTTAATATGCCACAACGACCACCACCACCAGGGTGACACCGCCTCAGCCTG 7LeuSerLeuProValArgAsnAsnThrLys 3 CAGTGGGCTGG 1374 ::::: 7 LysPheGlyTrp 1170	SerIleGlySerGlyProGlyAspThrGluAlaAspAspGlyPheProGluSerArgLeu TGACCTGGATGGAACAGAGTGAAATAAATGAATTACAAAGAGATATTTACATTCATCTGG GluGlyTrp	CTCCTCAGCAAGCAGAACCAGCTTCTCCTGGAGAGGCAGAGCCTGTCG :::::::::::::::::::::::::::::::	1 GAAATAGCTCAACTCAGTCAAGAAAAAAGGTATACATATGATAAATTTGGGAAAAGTTACAG :::::::::::::::::::::::::::::::::::	GATGAAAGCAAACACTTGGAACAGGAGGAAGGCAGAAGGCAGCCCTGGCCAGAGAGGAGGGAG	AGCCAGCTGCCTTCTCGGGAAATGGATGTCACAAAGGTGTGTGGAGAAATGCGCTATCAG

COMPUTER READABLE FORM: MEDIUM TYPE: Floppy

Floppy disk

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TELEFAX: (206) 236 0205

INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 955 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-006-676B-1
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NAME: OSTER, Jeffrey B.
REGISTRATION NUMBER: 32,585
REFERENCE/DOCKET NUMBER: REED-4
TELECOMMUNICATION INFORMATION:
TELECHONE: (206) 232 7845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION DATA:
              424 GACCAGTTGAGGAAGGAGCTGGAGAGGCAGGCGAGCGACTTGAAAAAGAACTTGCATCT 483
                                                                                                                                                   310
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745 GlnGlnLeuArgGluSerGluAlaArgAlaAla------GluLeuAlaSer
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FILING DATE: 15-JAN-1993
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                                                       AlaAlaAlaLysSerSerAlaGluGlnAspArgGluAsnThrArgAlaThrLeuGlu---
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                                                                                     CAAGTTTTGCAAATATCTGAGGAAGCCAATTTTGAAAAAAACCAAGGCTTTAATCCAGTGT 423
                                                                                                                                                AGCAGCTTGGCAGATACGCAGCAAAGAGAAGCAAGTGCTTATGAACAGGTGAAA-----
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Matches:
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INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 955 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER: 50
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206)587-0430
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{\tt GluLeuAlaSerGlnLeuGluSerThrThrAlaAlaLysMetSerAlaGluGlnAspArg}
                        CAACTGGAGGCCCAGGTGGAAAAGGTTACAAAGGAAAAGATTTCAGCTATTAATCAACTG
                                                  AlaThrLeuGluGlnGlnLeuArgAspSerGlu----
                                                                            ATAACGAAAGAAAGGGAGTACATGGGATCAAAGATGTTGATCTTGTCTCAGAATATTGCC 588
                                                                                                      GlnLeuGluAlaThrAlaAlaAlaLysMetSerAlaGluGlnAspArgGluAsnThrArg
                                                                                                                                CAGCAAGAG-----AAAAGGGCCATTGAGAAAGACATGATGAAAAAGGAA 528
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                                           TATGATAAATTGGGAAAGTTACAGAGAAGAAATGAAGAA 1035
                                                                                    Ser {\tt GlnLeuGluAlaThrAlaAlaAlaLysSerSerAlaGluGlnAspArgGluAsnThr}
                                                                                                                                CACCAACTGCACCTCACCAGATCTGAAATAGCTCAACTCAAGTCAAGAAAAAAGGTATACA
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Search completed: March Job time: 45.0233 secs 21, 2003, 13:07:07